

Do Ideal Standards Guide Hypothetical Internet-Dating Choices?

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Abstract

The study of human mate preferences has flourished over recent years, in large part thanks to the impact of evolutionary considerations. However, this work has been criticised for overly relying on self-report data (Cooper & Sheldon, 2002). A recent study by Eastwick and Finkel (2008) sought to address this issue by investigating actual mate selection behaviour in a speed-dating setting, but they found, surprisingly, that although participants' reported mate preferences replicated previous research, participants' actual choices did not. In this thesis I describe two studies that aimed to partially replicate and explain these findings by asking participants to imagine themselves in a hypothetical internet dating scenario. In Study 1 ($N = 104$), instructions were designed to manipulate both the consequence of obtaining a match with a target and the control participants had over whether they obtained a match. Contrary to my hypotheses, neither of these manipulations influenced hypothetical mate choices. However, as predicted, correlational indices of preference for attractive targets were related in a curvilinear fashion to number of targets picked, suggesting that such indices may suffer from restriction of range problems. Moreover, across experimental cells participants' choices were broadly consistent with evolutionary considerations, and sex differences in preference for attractive targets were mediated by participants' interest in short-term relationships. These latter two findings were replicated in Study 2 ($N = 71$) using a forced choice paradigm along with alternate measures of preferred target. These two studies suggest that individuals make mate choices that are predictably different across sex and held ideal standards. The results were also broadly consistent with evolutionary theory.

CHAPTER 1: CONCEPTUAL AND RESEARCH BACKGROUND:

EVOLUTIONARY PSYCHOLOGY AND MATE SELECTION

Finding love is a central preoccupation of the human condition (Fletcher, 2002). Indeed, contrary to the obstinate myth that romantic love is a Western invention (for instance, originating in the excesses of courtly life in 12th century Europe; de Rougemont, 1983), the evidence suggests that although the expression of love varies across cultures and time periods, it is a human universal (Hatfield & Rapson 2006; Jankowiak and Fishcher, 1992; Shaver, Morgan & Wu, 1996).

Nevertheless, men and women are faced with an ever increasing array of dating and mating contexts alien to our ancestors, including the recent proliferation of contraception, family planning (Fathalla, 1997), sperm banks (Scheib, 1994) and internet and speed dating (Eastwick & Finkel, 2008; Kurzban & Weeden, 2007).

Several researchers have adopted speed-dating methods in order to more closely examine attraction and mate selection (Eastwick & Finkel, 2008; Finkel Eastwick & Matthews, 2007; Kurzban & Weeden, 2005; 2007; Lenton, Fasolo, Todd 2008; 2008b; Todd, Penke, Fasolo & Lenton, 2007; Place, Todd, Penke, Asendorpf 2009; Provost, Kormos, Kosakoski & Quinsey, 2006; Fisman, Iyengar, Kamenica & Simonson 2006). Recent speed dating research has produced findings that challenge the conventional wisdom based on self-report methods to determine what people prefer in a mate. This introduction will first canvas the dominant evolutionary explanation of human mate preferences along with some of the research supporting it. Following this, it will turn to the challenge posed by speed dating findings and outline two current studies that investigate mate selection.

Evolutionary Psychology

Evolutionary psychology applies the theory of evolution by natural and sexual selection (Darwin, 1862; 1871) to human behaviour by explaining it in terms of adaptive mechanisms. That is, phenotypic characteristics of the mind have been genetically coded for because the expression of such characteristic by individuals has increased the representation of copies of those genes in the gene pool over evolutionary history (Tooby & Cosmides, 1990; Dawkins, 1976).

In *The Descent of Man* (Darwin, 1871), Charles Darwin significantly extended his original evolutionary theory in terms of sexual selection. That is, an organism's success in passing on its genes to future generations is a function not only of its ability to survive, but also its ability to acquire mates and produce viable offspring. Thus, it is advantageous for individual organisms to evolve mechanisms for 1) preferring potential mates whose genetic or metabolic contribution to offspring viability is higher and 2) advertising indicators that are preferred by potential mates.

Researchers operating within an adaptationist paradigm regularly use evolutionary considerations to predict gender differences (e.g. Buss & Schmitt, 1993, Gangestad & Simpson, 2000). Where males and females are thought to have faced similar adaptive problems, the same adaptations should have evolved across both genders to solve them. However, where males and females have faced different adaptive challenges, they are likely to have evolved sex-specific adaptations (Buss & Schmitt; Lieberman, 2006).

Parental Investment Theory and Sex Differences in Mate Selection

Trivers' (1972) parental investment theory posited that key aspects of mating behaviour differentially influence male and female reproductive success. He observed that across

sexually reproducing species, one sex generally invests more effort into raising offspring than the other, and this same sex tends to be more selective in choosing mates while the other sex will compete amongst themselves for access to mates. As an individual organism's total activity is finite, investment by the parent in the survival of offspring has an opportunity cost in terms of lost opportunities to mate again. In many species including humans and most other mammals, females are committed to providing a greater minimum parental investment through gestation, while the male's minimum investment may be limited to fertilisation. As each offspring demands more parental effort from the mother than the father, males that devote sufficiently high effort into mating can enjoy many times the reproductive success of other males. For such species therefore, the optimum (in terms of net reproductive success) ratio of mating to parental effort is shifted towards mating effort for males, and towards parental effort for females.

In bonding species such as humans, males also invest substantially in parenting (Trivers, 1972; 1985). *Homo sapiens* are born in an extremely vulnerable state, and even beyond infancy take years to fully mature (Trivers; Bowlby 1969/1982). Thus, parenthood is an especially arduous task in our species and the parental contributions of a second parent likely increased the prospects of offspring substantially. Consequentially men have evolved to provide some parental investment to young. Nevertheless, men benefit more from uncommitted copulation than do women. They should therefore be less investing in offspring and more interested in short-term mating than women.

Men are More Interested in Short-Term Relationships than are Women

Men have more to gain and less to lose from short-term sexual relationships, while women have more to gain and less to lose from long-term relationships (Townsend & Levy, 1990). In *Homo sapiens*, the minimum female parental investment is nine months longer than the male

minimum (Buss, 1989; Buss & Schmitt, 1993). Women stand to waste considerable investment if offspring die. Thus, in the event of abandonment by a mate, a woman's best response may be to raise the child on her own or with help from family or new mate. However, men faced with the same dilemma may be best served by cutting their losses and letting the infant die, as solo parenthood has relatively higher opportunity costs for men in terms of reproductive success otherwise obtainable (Trivers, 1972). Thus, men can exploit their mate's parental effort by reducing commitment or abandoning her, but are not vulnerable to such exploitation themselves. In order to protect themselves from this exploitation, women have evolved to be relatively picky about their mates, playing coy until they can be confident of a mate's commitment (Trivers). Indeed, research suggests that women are pickier than men in choosing mates, particularly in short-term contexts. Buss and Schmitt (1993) found that male students reported less exacting standards than did women in a short-term mate. Moreover, although women are more critical in their evaluations of potential friends or neighbours than are men, this difference is greater for potential mates, suggesting that women's pickiness is specific to the romantic domain (Brase, 2006). Kenrick, Sadalla, Groth and Trost (1990) asked participants about the minimum level on a number of different dimensions (such as attractiveness or status) they would accept in a mate, depending on the context (dating, sexual relations, steady dating or marriage). Women were more selective than men overall, particularly with regards to a sexual fling, where men's minimum standards tended to drop substantially – consistent with the notion that while uncommitted sex is costly for women, it is beneficial to men.

Women's choices, in turn, further encourage long-term commitment by men. Nevertheless, men should be generally more interested in short-term relationships with multiple mates, and should be willing to sacrifice mate quality for quantity in such contexts (Buss & Schmitt, 1993). This proposition has found considerable empirical support. Male

college students, relative to females, report more desire for short-term relationships, desire for more mates over any given increment of their lifespan and more willingness to have sex with a hypothetical attractive other they had known for two years or less (Buss & Schmitt). Across 44 cultures, men are consistently and substantially less restricted than women (Schmitt, 2005) on the Sociosexual Orientation Inventory, a five item scale ascertaining the degree to which individuals are willing to engage in sex without commitment (Gangestad & Simpson, 1990; Simpson & Gangestad 1991). Moreover, men seek short-term relationships, while women seek long-term relationships, more often in newspaper personal advertisements (Greenlees & McGrew, 1994). Townsend and Levy (1990) found that men reported preferring to have sex, rather than start a relationship, with a hypothetical partner, while women reported preferring to marry a given man than have sex with him. Similarly, although men and women may be similarly likely to accept a date invitation, men are far more likely than women to agree to a consequence-free sexual liason (Clark & Hatfield, 1989; Symons & Ellis, 1989). Finally, men report more sexual fantasies than women, along with having more visually explicit fantasies with a greater variety of partners (Ellis & Symons, 1990). The fact that playing the sexual field is probably a negative stereotype for men makes such findings difficult to explain purely within a sociological account (Ellis & Symons).

Ideal Standards

Because of the divergent adaptive challenges men and women have faced over evolutionary history, they have evolved to differ in what they value in terms of mate quality (Buss & Schmitt, 1993). The benefits of having a particularly good mate tend to fall into one of two categories: good genes contributed by the mate towards any offspring, or good investment stemming from the inherent potential advantages of allying with an individual whose reproductive interests overlap with one's own (Gangestad & Simpson, 2000). Because

women are more focused on parental effort and commitment with a single mate, they should, adaptively speaking, assign particular importance to partner traits indicating good investment: being able and willing to assist in the care of offspring. On the other hand, because men are less investing (and can take female parental investment somewhat for granted), they benefit more from heeding indicators of good genes and fertility (Gangestad & Simpson).

Fletcher, Simpson, Thomas and Giles (1999) used factor analysis to identify three important factors in people's standards for an ideal mate. They labelled the first warmth and trustworthiness, as it contained items that appeared to relate to the maintenance of relationship loyalty and intimacy. The second they called attractiveness and vitality, consisting of items relating to physical attractiveness, health and overall activity level. The last factor contained items pertaining to status, resources, and the potential to obtain them. While warmth and trustworthiness, along with status and resources, are somewhat straightforwardly linked to good investment mate selection, representing a man's willingness and ability to help with offspring, respectively (Gangestad & Simpson, 2000; Fletcher 2002), attractiveness and vitality's relevance to mate value is less straightforward.

Attractiveness for either sex is partially determined by physical characteristics including symmetry, averageness, smooth and blemish-free skin, lustrous hair, muscle tone, along with behavioural clues such as gait and overall activity level (Gangestad, Thornhill & Yeo, 1994; Buss & Schmitt, 1993). All these factors signal health, developmental stability and disease resistance, which are essential phenotypic traits in a mate (Lieberman, 2006; Barber 1995; Gangestad, Thornhill & Yeo, Buss & Schmitt). Symmetry also indicates genetic heterozygosity. Good health, in turn, suggests underlying genetic quality beneficial to offspring (Gangestad, Thornhill & Yeo). Other features of attractiveness are sexually dimorphic (Barber; Rhodes, Simmons & Peters, 2005). The muscle growth and

aggressiveness accompanying higher male testosterone production likely assists male intrasexual competition (Barber). Women rate dominant (Sadalla, Kenrick & Vershure, 1987), high-status men as more sexually attractive. This suggests that perceptions of social dominance and status may contaminate women's judgments of male attractiveness (Townsend & Levy, 1990; Townsend & Wasserman, 1998). Moreover, because testosterone production suppresses immune function, concurrent dimorphism and developmental stability signals a particularly efficient metabolism (Manning, Koukourakis & Brodie, 1997) in men. Indeed, symmetry is a better predictor of men's attractiveness than women's (Gangestad, Thornhill & Yeo).

On the other hand, because women's fertility is more age-dependent, it was adaptive for men to perceive young and fertile females as attractive (Buss, 1989; Buss & Schmitt 1993; Lieberman, 2006; Barber 1995). Indeed, while men tend to prefer a younger mate, and increasingly so as they age, women tend to prefer a slightly older mate (Buunk, Dijkstra, Kenrick & Warntjes, 2001; Bereczkei & Csanaky 1996; Greenlees & McGrew, 1994; Buss, 1989; Campos, Otta, Siqueira, 2002; Otta, Queiroz, Campos, da Silva, Silveira, 1999). A woman's attractiveness is thus improved by body and facial features correlated with youth such as a low waist-to-hip ratio (Marlowe, Apicella & Reed, 2005; Singh, 1995), symmetrical breasts (Singh), large eyes and forehead, full lips, and a small chin (Buss & Schmitt; Hassebrauck, 1998). This male preference would have provided sexually dimorphic selection pressure leading women to evolve to "fake" cues of youth in order to make them more attractive to men than similarly-aged competitors (Barber).

The functions of ideal standards have been bolstered by studies providing evidence for their role in relationship maintenance. Higher discrepancy between an individual's perceptions of their partner and their ideals predicts higher relationship dissatisfaction and

increased breakups over the first three months of a relationship (Fletcher, Simpson & Thomas, 2000) – and increased attempts to change the partner or relationship (Overall, Fletcher & Simpson, 2006).

People of both sexes rate warmth and trustworthiness as having the highest importance, followed by attractiveness and vitality, then status and resources (Fletcher, Tither, O’Loughlin, Friesen, Overall, 2004). However, men and women differ in their preferences in ways consistent with the evolutionary account.

Sex Differences in Ideal Standards

First, across numerous cultures and studies, men report valuing attractiveness more than women do, while women report valuing status and resources more than do men (Buss, 1989; Feingold, 1990; 1992; Townsend, 1989; Fletcher, Tither, O’Loughlin, Friesen & Overall, 2004; Koyama, McGain and Hill, 2004). Second, when participants are asked to construct their ideal long-term mate using “mate dollars”, men treat warmth and attractiveness, while women treat warmth and status, as a necessity by ensuring that they are sufficiently high before spending points on other traits (Li, Bailey, Kenrick, Linsenmeier, 2002). Third, content analysis of newspaper personals advertisements (Greenlees & McGrew, 1994; Wiederman, 1993) and pre-industrial and western folktales and literature (Gottschall, Martin, Quish, Rea, 2004) suggests that men seek attractiveness more than women, while women seek status and resources more than men. Moreover, these gender differences do not appear to be brought about solely by the structural powerlessness of women (Wiederman; Wiederman & Allgeier 1990; Townsend).

Changes in Ideal Standards across Short- and Long-Term Contexts

This picture of gender differences is complicated by the fact that mate preferences vary as a function of short- or long-term relationship goals. Although men favour a more promiscuous mating strategy than do women, both sexes have evolved to pursue either short-term or long-term mating opportunities when the benefits outweigh the costs (Trivers, 1972; Buss & Schmitt, 1993; Gangestad & Simpson, 2000).

Consistent with parental investment theory, success in pursuing a short-term relationship for men is maximised when they are able to obtain sexual access to multiple sexually permissive, fertile partners who will not demand additional investment before mating can occur. However, when seeking a long-term mate, men's reproductive interests are served by considering additional features. Because of concealed ovulation and internal gestation, paternity certainty is practically difficult to ensure and epistemically difficult to obtain (Trivers, 1972). A cuckolded man risks expending substantial parental effort to no advantage of his own offspring, at the cost of the reproductive success he would have otherwise gained (Trivers). Therefore men have evolved heightened sexual jealousy (Daly, Wilson & Weghorst, 1982), and are much pickier in choosing a long-term mate than they are in choosing a short-term mate (Kenrick, Sadalla, Groth & Trost, 1990; Fletcher, Tither, O'Loughlin, Friesen & Overall, 2004). While sexual permissiveness and lack of commitment are seen by men as slightly positive traits in a short-term partner, they are undesirable in a long-term mate (Buss & Schmitt, 1993). Moreover, men give warmth and trustworthiness and status and resources lower ratings when considering an ideal short-term partner than when considering an ideal long-term partner (Fletcher et al.).

Although women are unlikely to benefit from the same 'shotgun' strategy to mating available to men, they may benefit from surreptitiously copulating with other, genetically

superior men willing to provide sperm cells but not commitment (Trivers, 1972; Gangestad & Simpson, 2000). Indeed, women report valuing attractiveness relatively more, and warmth and trustworthiness as well as status and resources relatively less, in a short-term partner (Fletcher, Tither, O'Loughlin, Friesen & Overall, 2004). Moreover, short-term relationships may allow women to acquire additional resources or protection from their mate (Buss & Schmitt, 1993). However, clandestine affairs can be prohibitively costly for women. Because of male sexual jealousy, discovery endangers the present relationship, may garner the woman a reputation for cuckoldry, lowering her long-term mate value, and may even result in violence at the hands of her mate (Buss & Schmitt). Therefore, women should have evolved to pursue uncommitted relationships only in the most favourable circumstances, such as when a high discrepancy between a husband's and lover's genetic viability combined with suitable discreetness and maximum conception risk (Simpson & LaPaglia, 2007). Indeed, women at the most fertile stage of ovulation prefer the scent and appearance of more masculine men and rate more dominant men as more attractive in short-term contexts (Simpson & LaPaglia). Nevertheless, while sexually permissive women make ideal short-term mates, but terrible long-term mates from the perspective of men's reproductive success, the reproductive utility of male traits for women is arguably less variable across short- and long-term contexts. Because there are no male traits that are a blessing in a short-term mating context and a curse in a long-term contexts (or vice versa), women have not evolved mate preferences that shift quite as dramatically across these contexts as have men (Buss & Schmitt, 1993).

Individual Differences in Mating Strategy

Sex differences only account for some of the variance in mating preferences. Indeed, much of the between-individual variance is explained by the theory that men and women have evolved separate "conditional strategies" that fine tune their mating psychologies to the demands of

the environment (Gangestad & Simpson, 2000). While women generally focus on parenting effort, the good genes gained from a short-term mate are more valuable to women when pathogen prevalence is higher. Similarly, assistance provided by a long-term mate is especially valuable in more stressful environments. Indeed, women in countries with more pathogens or less environmental stress (as indexed by GDP and child mortality rates) trade the warmth and trustworthiness of a mate for attractiveness (Gangestad & Buss 1993) and have less restricted sociosexuality (Schmitt, 2005), which in turn is associated with trading off warmth and trustworthiness for attractiveness – particularly high masculinisation (Fletcher, Simpson, Thomas & Giles, 1999; Gangestad, Simpson, Cousins & Christensen, 1999, cited in Gangestad & Simpson, 2000; Provost, Kormos, Kosakoski & Quinsey, 2006). On the other hand, men's ability to engage in short-term mating is limited by female choice, so only those men with traits valued in a short-term mate by women will benefit from focusing on short-term mating. Supporting this, more symmetrical men are more likely to compete with and derogate rivals for women's attention than other men (Simpson, Gangestad, Christensen, Leck, 1999), invest less in their romantic partners (Gangestad & Thornhill, 1999b, cited in Gangestad & Simpson, 2000), and are more likely to obtain an extra-pair mate or become a woman's extra-pair mate (Gangestad & Thornhill, 1997). Furthermore, people of either gender that possess high mate value in their sex-preferred context pursue it more closely (Landolt, Lalumière & Quinsey, 1995; Rhodes, Simmons & Peters, 2003).

Nevertheless, the short-term mating psychology for women differs from that of men. Even sexually unrestricted female students reported having experienced anxiety and having probed their partner about his commitment after entering sexual relationships with no initial desire for commitment (Townsend, Kline & Wasserman, 1995). Similarly unrestricted men reported feel no such anxiety, and instead probed for opportunities to reduce investment and

pursue other women. In another study, less restricted women required less information about an attractive target's willingness to invest before they would consider having sex with him, yet they still required more such information than did men. Moreover, less restricted women required a similarly high quantity, relative to men, of information regarding status as more restricted women required (Townsend & Wasserman, 1998).

The literature summarised above presents a strong case for the impact of natural and sexual selection on human mate selection. Because women are more invested in offspring than are men, women are pickier in selecting mates and seeking a mate with the disposition and means to contribute to the rearing of young. While women are more interested in status and resources than men, men are relatively more focused on finding low-investment mating opportunities with attractive, fertile women. As discussed above however, individuals alter their mate selection behaviour according to the context. For instance, women may seek clandestine affairs to increase the genetic lot of their offspring when circumstances permit, and the impact of female choice upon male mating behaviour means that all but the most attractive men do better by pursuing a relatively investing mating strategy. Nevertheless, as I shall discuss in Chapter 2, new research investigating people's choices in controlled speed-dating environments has presented findings that are difficult to reconcile with this model.

CHAPTER 2: SPEED-DATING RESEARCH: A CHALLENGE TO THE MAINSTREAM

Methodologies used in mate selection research

One common complaint regularly levelled against intimate relationships research is that it too often relies upon self-report data. After reviewing 70 years of research on the link between personality and relationship outcomes, Cooper and Sheldon (2002) concluded that studies regularly relied solely on self-reports and rarely made use of more advanced designs incorporating longitudinal elements and/or mediating or moderating variables. Over-use of self-report data begs the question: are participant's self-reports (such as mate preferences) accurate? If for instance, both genders under-report how important attractiveness is to them, but women under-report it more (perhaps due to gender norms), then an illusory gender difference in self-reported mate preferences might be manifested (Feingold, 1990). Nevertheless, some studies address these weaknesses.

As discussed above, some researchers have looked at the ongoing effects of relationship cognitions upon relational events such as de-selection, also analysing the moderating or mediating influence of variables such as relationship satisfaction (Fletcher, Simpson & Thomas, 2000; Overall, Fletcher & Simpson, 2006). Nevertheless, it is difficult to conduct similar research investigating initial mate selection. Buss and Barnes (1986) investigated the self-reported mate preferences of men and women, and the relationship between those preferences and the personalities of their spouses – for instance, the wives of husbands that desired kind and considerate wives scored higher on measures of agreeableness and extroversion. However, people's ideal standards tend to change over the course of a relationship to more closely resemble strengths of the partner (Fletcher, Simpson, Thomas), and people's memories of what they sought in a mate prior to the relationship may also be

similarly biased (Todd, Penke, Fasolo & Lenton, 2007; Finkel, Eastwick & Matthews, 2007). Obtaining participants just before relationships begin would solve this problem, but this is a difficult option for obvious reasons.

Some studies (e.g. Campos, Otta & Siqueira, 2002; Otta, Queiroz, Campos, da Silva & Silveira, 1999; Greenlees & McGrew, 1994; Wiederman, 1993) have obtained their data from newspaper personals advertisements, which is an especially informative method because people have to pay for each line used, so will generally only request and offer characteristics that are important to them (Li, Bailey, Kenrick & Linsenmeier, 2002). Moreover, some studies also analyse the number of responses advertisers receive, which is a particularly informative source of naturalistic data.

A meta-analysis by Feingold (1990) marshalled evidence for sex-differences in the relationship between attractiveness and romantic popularity across five paradigms: studies using questionnaires, personals advertisements, studies correlating attractiveness with opposite-sex popularity, studies correlating attractiveness with liking by a dyadic interaction partner (e.g. a blind date), and experiments manipulating attractiveness of opposite-sex partner. Across all five paradigms, women's physical attractiveness was more predictive of romantic attraction than men's. Interestingly, women's attractiveness better predicted their opposite-sex non-romantic popularity than men's, suggesting perhaps that women prefer their romantic relationships to blossom from friendships (Feingold, 1992).

Research of Dating Behaviour

Another effective way of overcoming some of the weaknesses inherent in self-reports is to analyse behaviour as it unfolds at an event specifically set up for people to meet potential romantic partners. Walster, Aronson, Abrahams and Rottmann (1966) pioneered this approach when they organised a large dance in which male participants were assigned

dates that had purportedly been picked for them by a computer, based on their personalities. Attractiveness was the best predictor of men's interest in female partners. However, they did not measure women's interest in male partners, and they did not have a measure of warmth or status – the closest measures obtained were social skills and introversion.

More recently, researchers have started using “speed-dating” events to investigate initial romantic attraction. Individuals engage in a short (perhaps five minute) date with each other attendee, one at a time. After all the dates are over, each attendee is able to indicate on a score card which attendees (if any) they would like to see again. If two daters both pick each other then the dating organisation arranges for them to contact each other to meet up again (Finkel, Eastwick & Matthews, 2007).

Although speed dating is a recent social phenomenon, it still has reasonable ecological validity, as it is a comparable context to parties, bars, and tribal gatherings, where individuals meet a number of potential mates, often with the intention of beginning a relationship (Finkel, Eastwick & Matthews, 2007; Lenton, Fasolo & Todd, 2009). Finkel et al. also point out that speed dating affords great experimental control. For example, researchers can ensure each participant spends the same time conversing with all opposite-sex daters, and can alter the number or length of the dates. Additionally, research using speed-dating can be extended longitudinally to predict, for instance, ongoing relationship dynamics from pre-date information. Importantly, as speed-dating studies obtain information before a relationship begins, they avoid the retrospective memory biases in the research using already existing couples.

Speed dating research has had limited success in corroborating the evolutionary approach to mate selection. Fisman, Iyengar, Kamenica and Simonson (2006) obtained some gender differences in the characteristics predicting women's and men's choices. Women's

choices were more closely associated with target intelligence, race, and the affluence of the neighbourhood they grew up with, perhaps consistent with a greater preference for status and resources. More straightforwardly consistent with the theorizing above, men's decisions were guided more by their date's physical attractiveness than were women's, and they did not value intelligence or ambition in a date when it exceeded their own. Lastly, the proportion of speed dates picked by men was not associated with the size of the speed dating event, whereas women became more picky as group size increased, consistent with the notion that a more polygamous mating strategy may benefit men, while a more polyandrous mating strategy is unlikely to benefit women.

Kurzban and Weeden (2005; 2007) found that preferences listed on a speed dating website predicted individual's choice of which speed dating event to attend, but did not predict individuals' choices within events, which were largely a function of target attractiveness. Similarly, Todd, Penke, Fasolo and Lenton (2007) did not find evidence of stated preferences predicting choices; instead, the self-perceived attractiveness of women predicted the overall quality of mates they picked, while men chose women based on their physical attractiveness. These results are also consistent with a self-report study finding no relationship between stated preferences and predicted choices between vignettes (Wiederman & Dubois, 1998).

Lenton, Fasolo and Todd (2008; 2009) investigated the effect of number of targets on choices in both internet and speed dating. Participants expected greater enjoyment, increased satisfaction and less regret when choosing from larger sets of targets online. Nevertheless, participants presented with larger sets of targets did not experience more positive affect and suffered from greater memory confusions about their choices. Moreover, as set size increased, participants' speed-dating choices became more skewed (more agreement between

participants). Lenton et al. argued that people have difficulty processing larger sets of dates in either setting, and when faced with large sets eschew careful weighing of each target on multiple criteria and instead choose based on a single, quickly and easily assessed criterion such as attractiveness.

Speed Dating: A Possible Disconnect between Mate Preferences and Choices

Finally, Eastwick and Finkel (2008) measured participants' self-reported preferences prior to a speed-dating event, along with participants' perceptions of each of the individuals they met, and information on 17 relationship initiation variables ranging from whether they said "yes" to contacting possible dates during the speed dating event, to whether participants initiated sexual relations with them up to 30 days following the event. Participants' self-reported preferences replicated the traditional sex differences, and the perceived attractiveness, warmth and status of targets predicted relationship initiation, suggesting that people implicitly valued those dimensions. However, women did not exhibit a stronger implicit preference for status, nor did men exhibit a stronger implicit preference for attractiveness. Moreover, participants' stated preferences did not correlate with their implicit preferences. Eastwick and Finkel concluded, drawing from Nisbett and Wilson's (1977) article, that people do not have insight into the strength of their mate preferences, at least as they apply to initial mate selection. This poses a challenge to the evolutionary approach to mate selection – if the strength of people's preferences do not influence their behaviour, how can individual differences in those preferences be adaptations?

It is important to recognise the scope of this challenge. Buss (1995) classifies parental investment theory as a 'mid-level' evolutionary theory, with the theory of natural selection above it, and more specific theories, such as ideal standards theory below. Specific empirical findings, such as the speed dating results, might weigh against the existence of a purported

adaptive mechanism but they are unlikely to count against mid- or high-level theories; merely their correct application to the levels below. The theory of natural selection acts as a stimulator of hypothesis formation, but purported adaptive mechanisms are far from being logically entailed by the theory; sometimes they begin merely as hunches or open-ended questions (Ellis & Symons, 1990). Therefore, it is important to ask whether Eastwick & Finkel's (2008) null results are due, at least in part, to a) methodological peculiarities or b) something peculiar about the speed-dating context in particular.

Are Pickiness and Implicit Preferences Related in a Linear or Curvilinear fashion?

Choice of methods can dramatically influence the results obtained. Eastwick and Finkel (2008) used the within-participant correlations between each of their 17 outcome variables and the participant's rating of that individual's attractiveness, warmth, and status, as dependent variables in their study. The assumption presumably was that as participants' choices were more influenced by any given standard, then that participant's choices should track that quality more closely. However, it seems plausible that individuals with higher overall standards will also pick fewer targets. As the number of targets picked approaches zero, any variance in the dichotomous variable (yes versus no) will be eliminated, and the correlation between any predictor and choice will approach zero. The variance is similarly restricted for participants who picked most or all of the targets. Indeed, Eastwick and Finkel excluded such participants from their analyses using the within-participant correlational measure. But this approach eliminates the very individuals whose behaviour is most likely to be influenced by their prior standards. Because of restriction of variance, extremely selective and unselective participants will both have low scores on the within-participant correlational measure implicit preferences, and therefore the relationship between pickiness and the correlational measure is likely to be curvilinear, not linear, taking the form of an inverted

“U”. Thus, it seems likely that if participants with higher standards are also pickier, then preferences and this particular index of implicit preference might not be expected to be related in a linear fashion.

Do Perceived Control or Consequence Influence Dating Choices?

Mate selection is ultimately bilateral – at some key points during the development and escalation of a romantic relationship, agreement from both partners to proceed with the relationship is required. This would include asking a potential mate for a dance, on a date, or to marry. However, not all stages of a relationship follow this pattern. For example, a man might become infatuated with an unsuspecting female friend or acquaintance. He has many options available to him in terms of how he can try to catch her interest. He could pursue a friendship with the intent of making a good impression, waiting for the most favourable moment before making his move. Or, if it becomes apparent that no such opportunity will present itself – if he thinks she will definitely say no – he might opt not to make his move at all, saving his effort for less hopeless endeavours. In this example, the man was able to choose if and when to enter into the more bilateral choice-point by asking her out on a date.

In the typical speed-dating scenario, however, both partners are given a yes/no question – whether or not they want to contact their date. Typically, mutuality is required for the daters to receive each other’s contact details, and thus, speed-dating is a bilateral context. However, individuals only have had about 4 minutes with which to a) make a good impression and b) gauge how much their date reciprocates their attraction. As they cannot opt to “play it cool” for a while longer before asking their partner on another date, and as they may still be somewhat unsure of the interest of their dates, speed-daters may make some strategic choices that might not be expected in other contexts. For instance, some men might

reduce their pickiness in order to avoid missing matches. This should be accompanied by a reduction in the correspondence between their stated and in vivo preferences .

Another relevant feature of the speed-dating context is the consequence of saying yes to a date. In Eastwick and Finkel's (2008) study, participants who obtained a match by picking each other were allowed to contact each other through an internet messaging service. Importantly, participants were not compelled by the instructions to meet in person, nor were they given contact details for those participants. Therefore, saying yes to a possible date had minimal consequences. Placed in such a situation, it would be viable for somebody to pick each and every one of their dates except perhaps the dates that they found truly abysmal, in order to gain more information about them. It seems plausible that if participants were required to commit to a date with any matches they obtained, they would employ their ideal standards more carefully in choosing whether or not to pick each one.

Short- and Long-Term Mating Intentions

Another potential issue with the speed-dating paradigm is the influence of individuals' predisposition to engage in short- and long-term mating on their choices within the speed dating event. As discussed above, men tend to be more focussed on sexual, uncommitted relationships than are women, while women prefer relationships that develop from friendships. Feingold (1992) argued that compared with men, women are less often the relationship initiator, preferring a more slow-paced courtship. This presents the question: how will these tendencies effect speed-dating behaviour? It is possible that people who prefer long-term relationships that develop gradually from friendship are less likely to speed-date, resulting in a sample composed predominantly of people interested in short-term relationships, which may be particularly unrepresentative of the female population. Moreover, even speed-daters who are very interested in long-term relationships may attend

speed-dating events not to obtain a long-term mate, but for a short-term mate (Kurzban & Weeden, 2007). As discussed above, individuals often engage in mixed mating strategies that incorporate both short- and long-term mating tactics. Therefore, it should be informative to not only measure participants' attitudes towards short- and long-term mating, but to measure their short- and long-term intentions specifically regarding their behaviour in the speed-dating scenario.

The Present Research

The aims of the studies described below were to investigate whether Eastwick and Finkel's (2008) results might be explained by some of the methodological and contextual elements described above. Study 1 utilized questionnaire methods and asked participants to hypothetically make responses in an internet dating scenario. Information regarding participants' ideal standards and choices was gathered. The consequence of choices and control afforded to participants were manipulated in order to determine whether either of those features moderated the association between ideal standards and choices. In addition, Study 1 determined whether pickiness and the within-participant correlational measure of preference for attractiveness had a linear or curvilinear relationship. It was intended that if the consequence and control manipulations in study 1 were successful then the study would be followed up with a true speed-dating study. Study 2 also utilized questionnaire methods, and aimed to replicate Study 1's findings with an improved, forced-choice methodology.

CHAPTER 3: STUDY 1

The aim of study 1 was to investigate whether individuals' self-reported mate preferences and gender predicted their choices in a hypothetical internet dating scenario, and whether the link between preferences, gender and choices was moderated by the context as manipulated in the provided instruction set. Participants were asked to report their ideal standards (Fletcher, Simpson, Thomas & Giles, 1999), then to envision themselves visiting an internet matchmaking website and to examine ten fictional profiles of individuals listed on the site. Participants rated the ten targets on a number of criteria including attractiveness, and then predicted their desire to contact each target (on a 7-point Likert scale), and whether or not they would in fact elect to contact each target, given the hypothetical scenario.

The description of the hypothetical scenario varied across two independent variables, each with two levels: *control* and *consequence*. Participants in the low control condition were told they would only be considered to have obtained a match with (and receive the contact details of) individuals they elected to contact and who elected to contact them back. Participants in the high control condition were told that they were considered to have obtained a match with any individuals they elected to, regardless of whether those individuals also chose them. The consequence condition prescribed the minimum degree of contact participants would make with any individuals with whom they obtained a match. The low consequence instruction set allowed participants and their matches to choose whether to meet in person after initial email contact, while the high consequence instruction set required participants to commit to meeting in person every individual with whom they obtained a match.

As argued above, in the low control (bilateral) condition, participants may be motivated to relax their standards and choose individuals they otherwise might not pursue

romantically (because the individual is of unobtainably high or unacceptably low quality) in order to avoid missing matches. Participants in the high control (unilateral) condition, however, may be motivated to choose the same people they might normally pursue romantically in other contexts – people who closely match their ideal standards. Similarly, in the low consequence (email) condition, participants may pick most or all targets simply in order to make a more informed decision about whether to further pursue a relationship with them, and thus may not base their choices closely on their ideals. On the other hand, participants in the high consequence (dating) condition may not make their choices so lightly: instead they might be expected to pick only those targets that they were already interested in enough to commit to meeting in person.

Following this line of reasoning I predicted that, consistent with Eastwick and Finkel's (2008) findings, participants in the low control condition and participants in the low consequence condition would exhibit a small or nonsignificant relationship between their gender or preferences and their hypothetical choices. I conversely predicted that in the high consequence and high control conditions, participants would become more selective by choosing fewer targets, and choose targets more closely based on target attractiveness than in the low control or consequence conditions. Moreover, I predicted that in the high control and high consequence conditions, the extent to which each participant's choices were based on target attractiveness would more strongly correlate with self-expressed preferences than in the low consequence or control conditions.

As discussed in the introduction, previous research (Buss, 1989; Feingold, 1990; 1992; Townsend, 1989; Fletcher, Tither, O'Loughlin, Friesen & Overall, 2004; Koyama, McGain and Hill, 2004) has shown that males report assigning more importance to attractiveness and vitality than do females, and I expected to replicate this finding. Moreover, these gender differences in ideal standards are adaptations according to the evolutionary

model. And although psychological mechanisms need to have left an imprint on behaviour in order to have been selected for, it is fallacious to assume that they are adaptive in the modern world. Nevertheless, I hypothesized that (at least in the high consequence/control condition) males would base their hypothetical decisions more closely on attractiveness than females. Moreover, I predicted that the direct path from gender to hypothetical choices would be (at least partially) mediated by differences in ideal standards for attractiveness as can be seen in Figure 1.

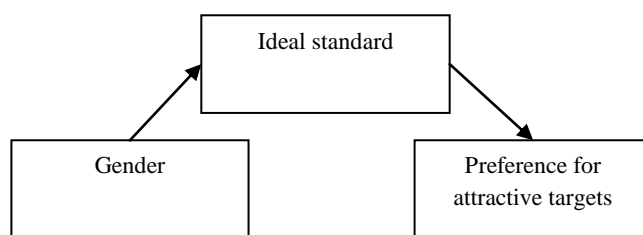


Figure 1: Hypothesized mediation relationship between gender, ideal standards and preference for attractive targets.

In the introduction I also argued that individuals have evolved to favour short- or long-term relationships with varying degrees of enthusiasm, depending on gender and life circumstances. It was predicted that these adaptive individual and gender differences would influence choices in a straightforward way (at least in the high consequence/control condition). Thus, it was predicted that not only would males report having a greater intention to pursue short-term relationships in the internet dating scenario, but that people with a greater preference for short-term relationships would be more picky (pick fewer targets), and would exhibit a greater correlation between their perceptions of a target's attractiveness and whether they picked them.

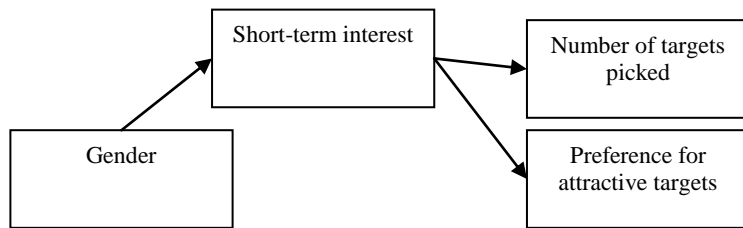


Figure 2: Hypothesized mediation relationship between gender, short-term interest, and both number of targets picked and preference for attractive targets.

Finally, as previously discussed, I was interested in whether the relationship between the number of targets picked by a participant and the within-participant correlations representing the degree to which participants elected to contact attractive targets was linear or curvilinear. Eastwick and Finkel (2008) used the latter as their index of the effect a given target trait had on participants' choices. However, if this within-participant correlation is related in a curvilinear fashion to number picked, then it is possible that individuals with higher standards will pick fewer targets, thus exhibiting lower correlations between any given trait and whether or not they picked each target. Because the size of a correlation is dependent upon each variable having adequate variance, I predicted that as the number of targets picked by a participant approached none or all of the targets, the variance in choice would approach zero and the correlation between whether the participant picked a target and the attractiveness of that target would also accordingly approach zero. This should produce a curvilinear (inverted U shape) association between pickiness and the correlation gauging implicit preference for attractiveness.

However, the predicted curvilinear relationship should disappear when an alternative measure of implicit preference for attractiveness is used: that is the within-participant correlation between attractiveness and desire to contact ratings. This alternative index should not suffer from restricted variance in the same way as simple yes/no choices. Therefore, it

was predicted that the number of targets picked and the within-participant correlation between attractiveness and desire to contact would be related in a linear rather than curvilinear fashion.

In summary the hypotheses for study 1 were:

1. In the high consequence and high control conditions, men (relative to women) and participants with higher ideal standards for attractiveness should pick targets more closely based on attractiveness. Participants in the high consequence and control conditions should also be pickier.
2. The effect of sex on preference for attractive targets (regardless of whether this effect occurs across control/consequence cells or within the high consequence/control cells only) should be mediated by both ideal standards and short-term interest. Men should also be less picky and this should be mediated by short-term interest.
3. Across all participants, there should be a curvilinear relationship between the number of targets picked and preference for attractiveness, but only for the index of preference for attractiveness that is based upon participants' yes or no choices. This curvilinear regression line should be in the form of an inverted U.

Method

Participants

Power analyses suggested that in a 2x2 ANOVA design, 50 participants in each of the two levels yields over 80% power to identify a small to moderate effect of $d = .45$ ($r = 0.22$) for an alpha level of .05. Fifty-two male and 52 female participants were recruited and randomly allocated to one of the four experimental conditions, resulting in 13 males and 13 females in each cell of the 2x2 design. Within each cell, participants were randomly assigned to one of

the 13 permutations of vignettes (described below) so that each of the 13 permutations was covered eight times in total: once for each sex and level within the consequence and control manipulations.

Participants were all students, with ages ranging from 17-34 and a mean age of 21.5. Advertisements were posted on notice boards throughout Canterbury University and through bulk emails to students enrolled in various university departments. Participants recruited through these advertisements were paid \$10 in petrol vouchers for their time. The balance of participants was recruited through the psychology department's participant pool scheme. Freshman psychology students at the University of Canterbury are required to participate in one departmentally-approved psychology experiment per semester, for which they receive 2% course credit in lieu of a monetary incentive. Forty-six females and 32 males were recruited through advertising; the rest were recruited through the participant pool. The data for six participants was excluded because of missed questions; these participants were replaced in order to maintain a total of 104.

Materials

Ideal Standards measures. The short forms of the Partner Ideal Standards Scale (Fletcher, Simpson, Thomas & Giles, 1999) asks participants to rate on a 1-7 Likert scale how important each of 17 qualities are in their ideal partner in a close relationship (dating, living together or married). I also used a variation of this scale, the *Self Perception Scale*, which has the same items as the partner ideal standard scale but asks each participant to rate each factor in terms of how accurately it describes his or herself.

The 17 items are split into three subscales, each of which corresponds to one of the three ideal standards: warmth and trustworthiness (W/T), attractiveness and vitality (A/V), and status and resources (S/R). Because the vignettes that participants were shown only gave

information on facial attractiveness and no explicit information about body shape or overall vitality, I removed the three vitality items and changed one of the remaining three attractiveness items from *nice body* to *nice looking*. Mean scores for each subscale were calculated. The Partner Ideal Standards scales have demonstrated good internal, test-retest, convergent and predictive validity in prior research (Fletcher, Simpson, Thomas & Giles, 1999; Fletcher, Simpson & Thomas 2000; Overall, Fletcher & Simpson 2006). The scales also attained good internal reliability in this study. In study 1, the three self subscales had Cronbach's alphas of .84, .91 and .87 for W/T, A/V and S/R, while the three ideal subscales had Chronbach alphas of .83, .88 and .89 for W/T, A/V and S/R respectively.

Global self-esteem measure. Rosenberg's Self Esteem Scale (1965) is a ten item scale asking participants to respond to a number of statements in the first person such as "On the whole, I am satisfied with myself" and "I wish I could have more respect for myself" by circling one of four points on a scale ranging from *strongly agree* to *strongly disagree*. The RSE is the most commonly-used measure of global self esteem and has good validity and reliability (Gray-Little, Williams & Hancock, 1997). In the present study it had a Cronbach's alpha of .86.

Instructions. Participants were given two pages of written instructions (Appendix 1A) asking them to envision a hypothetical scenario in which they were single and using an internet dating service. The first page explained that participants were to be presented with 10 profiles of hypothetical singles who were also using the dating service, and that they would be asked to rate them and indicate which, if any, they would choose to make contact with. The first page was invariant across experimental conditions and contained two Likert-scale questions asking participants to predict their level of interest regarding pursuing both a relatively casual, short-term relationship and a relatively serious, long-term relationship in the context of the hypothetical scenario, from 1 (not at all interested) to 7 (very interested).

The second page of instructions explained the matching process in more detail and varied according to the two experimental conditions. The instructions in the second page either told participants they could unilaterally choose to initiate contact with whichever targets they chose to, regardless of whether those people also picked them in return (high control), or else specified that participants would only be able to make contact with targets that they chose and who chose them in return (low control). The instructions stated that initial contact would be through email, and either said that pairs could choose between themselves whether to meet in person (low consequence) or that pairs were required to commit to meeting at least once in person (high consequence) after making initial contact.

Vignettes. Participants were presented with ten vignettes composed of a colour photograph measuring 79mm tall and 51-74mm wide (Appendices 3A-3B), and a one paragraph, first-person description (Appendix 2A). Images of the faces of twenty male and twenty females between the ages of 18-28 were downloaded from the web. In order to obtain a sufficiently wide range of attractiveness levels, some of the images were obtained through a database on the Productive Aging Laboratory website (<https://pal.utdallas.edu/facedb/request/request>; Minear & Park, 2004), and some were obtained through a number of actor agency websites, including New Faces (<http://www.newfaces.com/>). These images were each independently rated for attractiveness prior to the experimental study by ten male and ten female raters, and ten images of each sex were selected in order to achieve a sufficiently wide spread of different levels of facial attractiveness. Each of the ten faces was given a number, representing its rank within its gender in terms of averaged attractiveness ratings by the 20 coders.

Ten short self-descriptions were composed by the experimenter after spending some time reading profiles on New Zealand dating websites in order to maximise ecological validity. These descriptions were also independently rated for overall positivity, in order to

ensure that they did not vary very much, and adjustments were made to descriptions that deviated too far from the mean. Thirteen orderings of these descriptions were randomly generated. Thirteen sets of ten male plus 13 sets of ten female vignettes were formed by matching the first description with the most attractive face, the second with the second most attractive face, and so on. This allowed for each of the 13 participants within each of the eight gender X control X consequence groups in the study to be presented with a different permutation of face-description pairings, while each group was presented with the same 13 permutations once each.

Target rating forms. Each target vignette had two Likert-scale measures clipped to it. Participants were asked “*To what degree is this person attractive?*” from 1 (not at all attractive) to 7 (very attractive). They were also asked “*To what degree does this person have a nice personality?*” from 1 (not a nice personality at all) to 7 (a very nice personality).

Target choice form. Participants were presented with a form listing the ten names associated with each vignette with two questions associated with each. Participants were instructed to rate their *desire to contact* the individual given the scenario outlined, on a 7-point Likert scale from 1 (*no desire to contact*) to 7 (*a great deal of desire to contact*). Additionally, each name had a tick-box that participants were instructed to tick if they would in fact choose to get to know that individual more, given the scenario outlined.

Procedure

Participants completed all scales in the Social Psychology Laboratory at Canterbury University. The room was divided into booths in order to give participants privacy. On arrival, participants were given an information and consent form, explaining the broad purpose of the study, stressing that participation was anonymous and that they could withdraw at any time up until when their data was included in the pool. They were given all

materials except the debriefing sheet and instructed to read all instructions carefully and to make sure they answered all the questions on each page before moving on to the next page.

Participants first provided demographic information and completed the Ideal Standards questionnaire twice: once regarding their ideal partner, and once regarding their self-perceptions. Participants then completed the Rosenberg Self-Esteem Scale.

Following this, participants read the first page of instructions and answered the two items pertaining to short- and long- term mating intentions. Next they read the second page of the instructions containing the experimental manipulation. The second page urged participants to speak to the experimenter if they had any questions before proceeding.

Once participants indicated that they understood the hypothetical scenario, they were presented with the 10 vignettes, each of which was clipped to a target rating form. They were instructed again to fill in each form regarding the vignette attached to it. Once they finished they completed the target choice form by rating their desire to contact each individual and indicating the individuals they would choose to contact.

Finally, participants were thanked, debriefed fully, and paid/marked off for course credit where appropriate.

Results

This section will initially cover the results pertaining to participant pickiness. Following this, I will detail the results for participants' implicit preference for attractiveness. The final section will address the nature of the relationship between pickiness and implicit preference for attractiveness.

Results for Pickiness Measures

Each participant was assigned a score representing the number of individuals they elected to contact. This score ranged from 0 (did not pick anyone) to 10 (picked everyone). Therefore, a low score indicated a high degree of pickiness. An alternative index of pickiness was also derived for each participant – the mean *desire to contact* rating the participant gave across the 10 vignettes. This score ranged from 1 to 7; a lower score indicating more pickiness. The two indices of pickiness were strongly correlated $r(102) = .57, p < .01$.

Table 1. Number of targets picked by sex, control and consequence. Values listed are means with standard deviations in parentheses.

		Females		Males	
		Control		Control	
		Low	High	Low	High
Consequence	Low	3.62 (1.12)	4.08 (1.19)	4.54 (1.39)	3.69 (1.89)
	High	2.62 (1.80)	3.08 (1.44)	4.00 (1.78)	4.23 (1.09)

Table 2. Mean desire rating given by sex, control and consequence. Values listed are means with standard deviations in parentheses.

		Females		Males	
		Control		Control	
		Low	High	Low	High
Consequence	Low	3.22 (.82)	3.81 (.36)	3.87 (.76)	3.82 (.70)
	High	3.07 (.84)	3.23 (.53)	3.72 (.53)	3.81 (.65)

Did sex, control, consequence or any interactions predict pickiness? I conducted two 2 (sex) X2 (consequence) X2 (control) ANOVAs using each of the two indices of pickiness as the DVs. I predicted three main effects holding across both DVs: that females, participants in the high consequence condition, and participants in the high control condition would be more picky (would pick less and would give a lower mean desire to contact rating).

Table 1 displays the cell means and standard deviations using number picked as the dependent variable. Consistent with the hypothesis, females picked fewer targets than males (3.35 and 4.12, respectively; $F(1, 96) = 6.89, p < .05$). Contrary to the hypothesis however, there were no significant main effects for either the control ($F(1, 96) = .07, n.s.$) or consequence ($F(1, 96) = 2.91, n.s.$) manipulations. None of the 2- or 3- way interactions were significant.

Table 2 displays the cell means and standard deviations for mean desire. As predicted, females gave a lower mean desire rating (were more picky) than males (3.33 and 3.80 respectively, $F(1, 96) = 12.9, p < .01$). However, there were no main effects for control ($F(1, 96) = 2.25, n.s.$) or consequence ($F(1, 96) = 2.91, n.s.$). None of the 2- or 3-way interactions were significant.

In order to test whether the results for number picked or mean desire were qualified by other passive variables, I repeated the above analyses as ANCOVAs, sequentially adding each passive variable as a covariate. The variables were the participant's self-rated attractiveness, ideal standard for attractiveness, self esteem score, short term interest, long term interest, and whether the participant was in a relationship. Only controlling for short term interest influenced the results for number picked, by reducing the effect for sex to nonsignificance; $F(1, 96) = 1.48, n.s.$ However, none of the six controlling variables made any difference to the results for mean desire.

Did either experimental manipulation interact with other passive variables to predict pickiness? As neither of the experimental manipulations had main effects on either of the indices of pickiness, I conducted six separate hierarchical regressions for each index to investigate whether either of these two manipulations had effects moderated by any of the six passive variables: self-rated AV, ideal AV, global self esteem, short term and long term interest, and being in a relationship. All non-binary passive variables were initially centered. I then made six pools of four independent variables: each pool containing sex, control, consequence and one of the six passive variables. Following this, I calculated the six two-way, four three-way and one four-way interaction terms formed by combining the four independent variables in each pool. For each pool, I then regressed each of the indices of pickiness first on just the four main IVs, then the main IVs and the six 2-way interactions, then the main IVs plus the 2- and 3-way interactions, and then all the terms, each time noting any effects that reached an alpha of .05.

Only two interaction terms predicted either index of pickiness, both predicting mean desire only. However, neither of these interactions were readily interpretable nor were they predicted. Given the post-hoc nature of the analysis and the number of comparisons (180), it seems likely that the two significant beta weights were due merely to chance.

Were sex differences in pickiness mediated by short-term interest? One of my mediation hypotheses was that men should be less picky, and this relationship should be mediated by men having more interest in short-term relationships. Baron and Kenny (1986) listed four requirements for mediation. First, the initial variable must be correlated with the outcome variable at the zero-order level. Second, the initial variable must be correlated with the mediator. Third, the mediator must be significantly associated with the outcome variable when simultaneously controlling for the initial variable. Fourth, the direct path from the initial variable to the outcome variable must be reduced when controlling for the mediating

variable (for total mediation, this path must be reduced to zero). The hypothesized mediation relationship was supported for number picked, as shown in figure 3. After controlling for short-term interest, the drop in the direct path from sex to number picked was significant; Sobel's test statistic = 2.45, $p < .01$. This pattern was not replicated for the alternative measure of pickiness, mean desire rating, as although sex was associated with mean desire rating at the zero-order level ($r(102) = .33, p < .01$), short-term interest was not ($r(102) = .18, n.s$).

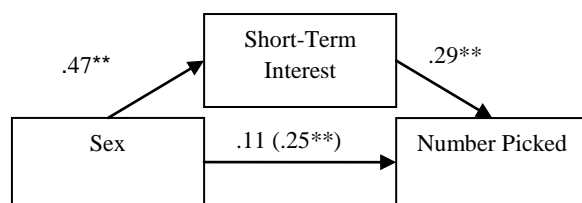


Figure 3. Pattern of zero-order correlations and beta weights supporting short-term interest mediating sex's effect on number picked. ** denotes $p < .01$, 2-tailed.

Summary for pickiness. In summary, the hypotheses for pickiness were only partially supported. First, although females were pickier than males, neither the control nor the consequence manipulations had any effect on either index of pickiness. Second, short-term interest mediated sex's effect on number picked, but did not mediate sex's effect on mean desire.

Results for Preference for Attractive Targets

Two indices of preference for attractive targets were derived: the degree to which the attractiveness ratings a participant gave were associated with a) electing to contact and b) desiring to contact, the targets in the vignettes. Within-participant correlations (Fisher's Z-transformed to make the distribution more normal) were calculated between the attractiveness ratings each participant gave each vignette and whether he or she elected to contact them or

not (mean = .68, SD = .21). An analogous index for participants' ratings of their desire to contact each target was then calculated by Fisher-transforming the correlation coefficient between the ten attractiveness ratings and desire to contact ratings within each participant (mean = .80, SD = .17). A higher Fisher's Z score on either of these two variables means that attractiveness was more strongly associated with electing or desiring to elect, respectively, for that participant.

Did sex, control, consequence or any interactions thereof predict implicit preference for attractiveness? Two 2 (sex) X 2 (consequence) X 2 (control) ANOVAs were calculated; one for each of the two measures of implicit preference for attractiveness. Two 2-way sex interactions were hypothesized across both DVs: males would show a larger increase in preference for attractive targets, relative to females, in both the high control and high consequence conditions.

Table 3. Correlational, choice-based index of preference for attractive targets, displayed according to sex, control and consequence. Values listed are means with standard deviations in parentheses, followed by number of cases.

		Females		Males	
		Control		Control	
		Low	High	Low	High
Consequence	Low	.71 (.38) n=13	.94 (.35) n=13	1.26 (.56) n=13	.87 (.45) n=13
	High	.92 (.55) n=11	.97 (.48) n=12	.920 (.55) n=13	1.00 (.33) n=13

Table 3 shows the cell means and standard deviations for the choice-based measure of preference for attractive targets. Unlike the two pickiness measures, this measure did not have equal cell sizes as some participants elected to contact zero targets and therefore had no variance in their electing responses, making their within-participant correlations impossible to calculate. Neither the sex X control ($F(1,93) = 2.50, n.s$) nor the sex X consequence ($F(1, 93) = 1.54, n.s$) interaction effects were significant. Although males (mean = 1.01, SD = .49) showed a stronger preference for attractive targets than did females (mean = .88, SD = .44), this main sex effect was not significant ($F(1, 93) = 1.96, n.s$). There were no other significant main effects or interactions.

Table 4 gives the cell means and standard deviations for desire-based measure of preference for attractive targets. Contrary to my hypotheses, neither the sex X control ($F(1, 96) = 1.11, n.s$) nor the sex X consequence ($F(1, 96) = .61, n.s$) interactions reached significance. However, there was a main effect for sex: males (mean = 1.40, SD = .52) exhibited a greater desire to contact attractive individuals than females (mean = 1.17, SD = .48; $F(1,96) = 5.22, p < .05$).

Table 4. Correlational index of desire for attractive targets, displayed according to sex, control and consequence. Values listed are means with standard deviations in parentheses.

		Females			Males	
		Control			Control	
		Low	High		Low	High
Consequence	Low	.97 (.46)	1.18 (.33)		1.43 (.63)	1.33 (.43)
	High	1.21 (.59)	1.32 (.47)		1.41 (.54)	1.42 (.53)

In order to assess whether the ANOVA results for implicit preference for attractiveness were influenced by the inclusion of additional variables, the same six variables used as covariates in the ANCOVA analysis for pickiness were sequentially added as covariates to each of the ANOVA calculations for implicit preference for attractiveness. To reiterate, the passive variables were self-rated attractiveness, ideal attractiveness, global self esteem, short term and long term interest, and being in a relationship. None of the variables influenced the null results for the decision-based index of implicit preference for attractiveness when entered as a covariate. Global self-esteem reduced sex's effect on the desire-based index of implicit preference for attractiveness to marginal levels when entered as a covariate ($F(1, 96) = 3.82, n.s.$). Short-term interest also reduced sex's effect on the desire-based index to nonsignificance ($F(1, 96) = .85, n.s.$).

Did the consequence or control manipulations moderate the association between ideal standards and preferences? As with the pickiness data, I conducted six more hierarchical regressions for each index of preference for attractive targets, analogous to those conducted for the two pickiness indices. This allowed me to investigate whether control or consequence had effects moderated by the same six abovementioned passive variables. I hypothesized that participants in the high control and consequence conditions should show a stronger relationship between their ideals and preferred targets – in other words, the control X ideal attractiveness and consequence X ideal attractiveness interaction terms should be positively associated with preference for attractive targets.

Results pertaining to this moderation hypothesis are displayed in table 5. Contrary to the hypothesis, the ideal X control and ideal X consequence interaction terms did not significantly predict either index of preference for attractive targets. In fact, the only significant effect was a main effect: participants with higher ideals for attractiveness elected to contact more attractive targets.

Table 5. Effect of control and consequence manipulations, ideal attractiveness, and manipulation * ideal interactions on choosing and desiring attractive targets.

	Choosing	Desiring
Control	.00	.07
Consequence	.04	.14
Ideal for Attractiveness	.22*	.15 (.16)
Control*Ideal	- .07	- .19
Consequence*Ideal	.25	- .06

Note. Statistics reported are standardised beta weights.
Two way interaction effects controlled for both main effects. Control and consequence effects controlled for Ideal only. Ideal effect controlled for control only, with effect controlling for consequence in parentheses if different.
* denotes $p < .05$.

Were sex differences in preference for attractive targets mediated by ideal standards or short-term interest? The hypothesis that males' stronger preference for attractive targets would be mediated by their higher ideal for attractiveness was not supported, as males did not report a higher ideal standard for attractiveness than females. ($r(102) = .08, n.s$).

I hypothesized that males' stronger preference for attractive targets would be mediated by more interest in short-term relationships. As male sex was unrelated to the measure of preference for attractiveness based on choices ($r(99) = .14, n.s$), the hypothesis was unsupported for that measure. However, it was supported for the desire-based measure. Consistent with Baron and Kenny's (1986) requirements for mediation and as shown in figure 4, males reported desiring to contact more attractive targets, and more interest in short-term relationships. Statistically controlling for short-term interest significantly reduced the size of the direct path from sex to desiring attractive targets; Sobel test statistic = 2.01, $p < .05$.

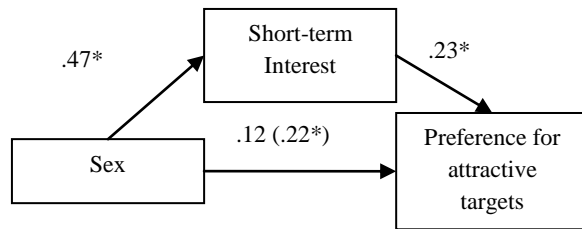


Figure 4. Pattern of zero-order correlations and beta weights supporting mediation relationship between sex, short-term interest, and desiring to contact attractive targets. * denotes $p < .05$.

Summary of results for preference for attractive targets. Neither control nor consequence interacted with sex to predict either index of implicit preference for attractiveness, contrary to the hypothesis that men's strong preference for attractive targets, relative to women's, would be greater in the high consequence and control conditions. Nevertheless, males did desire to contact attractive targets to a greater extent than females did.

The control and consequence manipulations also failed to interact with self-reported ideal for attractiveness to predict either index of preference for attractive targets, inconsistent with the hypothesis that in the high control and consequence conditions participants' ideals would more strongly predict their preferred targets. Across experimental conditions however, participants reporting higher ideal attractiveness did in fact elect to contact attractive targets more than did those reporting lower ideal attractiveness.

Lastly, only one of the three hypothesized mediation relationships received support. Males' greater desire to contact attractive targets was mediated by their greater interest in short-term relationships.

Were Pickiness and Preference for Attractive Targets Related in a Curvilinear Fashion?

Finally, I analysed the relationship between the two indices of pickiness and the two indices of implicit preference for attractiveness. I predicted a curvilinear relationship, taking an inverted “U” shape such that the perception-decision association would approach zero when very many or very few targets were picked by a participant (a negative beta weight).

Number picked and choice-based measure. The predicted curvilinear relationship was empirically supported (Figure 5). Both number picked ($\text{Beta} = 1.25, p < .05$) and its square ($\text{Beta} = -.99, p < .05$) predicted the within-participant relationship between perceptions of attractiveness and decision to contact. Adding the quadratic term to the linear term increased the multiple R from .28 to .35. This quadratic term was significant in spite of the fact that no participant picked eight or more of the ten targets.

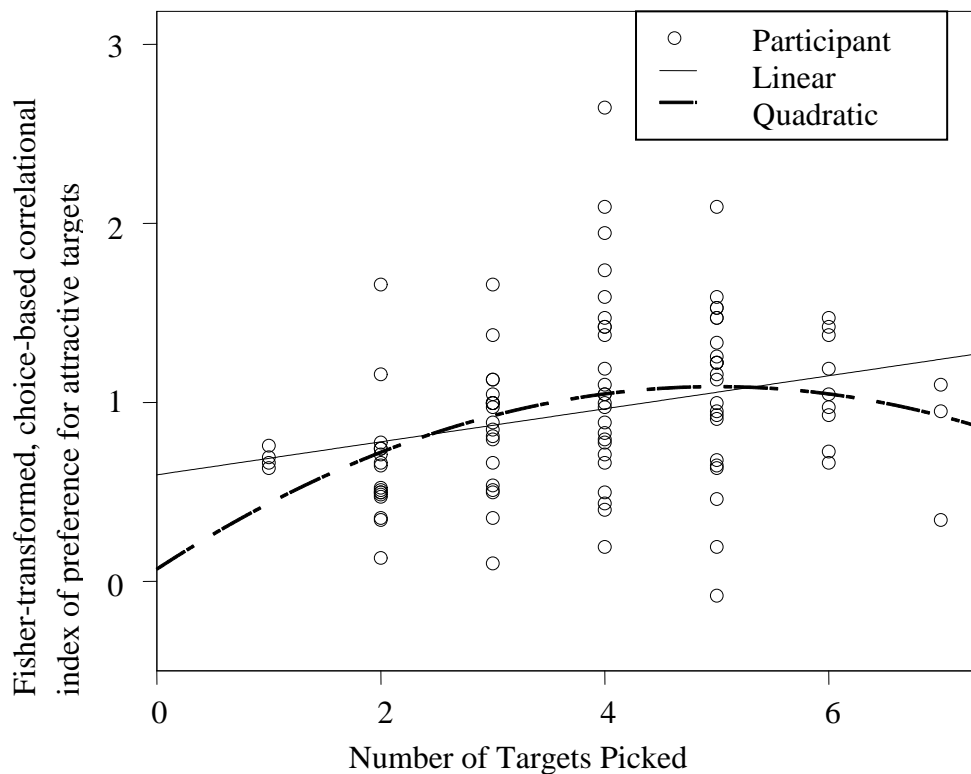


Figure 5. Scatterplot of number of targets picked versus choice-based measure of preference for attractive targets.

Alternative measures of pickiness and preference for attractive targets. As with number picked, higher mean desire ($Beta = 1.5, n.s.$), and lower squared mean desire ($Beta = -1.5, n.s.$) both predicted choosing more attractive targets, but both beta weights were of only marginal significance. On the other hand, neither number picked ($Beta = .15, n.s.$), mean desire ($Beta = .76, n.s.$), nor either of their squares (respectively: $Beta = -.07, n.s.$; $Beta = -.74, n.s.$) predicted the desire-based index of preference for more attractive targets.

Summary. As predicted, pickiness and preference for attractive targets had a curvilinear relationship such that participants that picked especially many or few targets tended to prefer more attractive targets, but only when number picked was used as the index of pickiness and only when the choice-based index of preference for attractive targets was used. The same curvilinear relationship did not reach significance when mean desire or the desire-based index were used instead.

Discussion

The control and consequence manipulations had none of the predicted effects on any of the dependent variables at the main effect or interaction level. Neither control nor consequence predicted pickiness or preference for attractive targets. Nor did either manipulation predict a stronger association between male sex or ideals and preference for attractive targets.

Experimental manipulations aside, female participants were pickier than male participants across both pickiness measures. Moreover, men desired to contact more attractive targets across all experimental cells (although this desire was not exhibited in their actual choices). Similarly across experimental cells, participants who reported higher ideal standards for attractiveness chose more closely based on target attractiveness, although they did not desire attractive targets more. Two of the six hypothesized mediation relationships

were supported. As men did not report higher ideal standards for attractiveness than women, this variable did not mediate men's stronger preference for attractive targets. Nevertheless, men's greater interest in short-term relationships mediated both their stronger desire for attractive targets (but not their choices) and their greater number of targets picked (but not their mean desire).

Lastly, as predicted, number picked and the choice-based measure of preference for attractive targets were related in a curvilinear fashion, taking the form of an inverted "U", such that when participants picked many or few targets, the variance in their yes or no choices was depressed and their choices correlated less strongly with target attractiveness.

As the consequence and control manipulations were novel, there are numerous reasons why they may not have been successful. The manipulation may have been too subtle, preventing participants from even noticing the relevant contextual features. If a similar manipulation is used in a future study, it would perhaps be worthwhile to present the instructions in both written and verbal form in order to ensure participant comprehension. Additionally, the purpose of the study may have been too transparent to participants. Participants were asked to report their ideals, and soon after were asked to rate and choose hypothetical dates. It may have been obvious that the study was investigating the association between preferences and behaviour. Demand characteristics may have therefore lead participants to think about the consistency between their ideals and choices more than they might otherwise do. In any future studies a manipulation check should be implemented to ascertain whether participants comprehended the instructions or guessed the purpose of the study.

Another possible reason for the failure of the manipulations is that tuning mate choices to the control or consequence afforded requires more motivation than participants

may have when choices are only hypothetical. It is unlikely that people have evolved specific mechanisms to attend to the control and consequence of dating contexts. People's mating psychology is flexible, however (Gangestad & Simpson, 2000), and it is plausible that if an effective strategy for a mating context, such as temporarily broadening their mating standards, becomes apparent to somebody, they may adopt it. Nevertheless, without the automaticity that comes with a specifically evolved adaptive heuristic, this reasoning process is likely to be slower and require deliberate, effortful concentration. Individuals in the present study may not have been motivated sufficiently to strategise carefully about their choices. Participants may be more likely to carefully consider the manipulated contextual factors if they believe the dating scenario has real consequences for their dating prospects.

The validity of the choice-based measure of preference for attractive targets was called into question by the fact that, consistent with the hypotheses, scores on the measure was reduced for participants that picked most or few of the targets. People with higher overall standards are likely to be pickier, and leading their yes or no choices to correlate less strongly with the ratings they gave them. However, this misleadingly suggests that the choices of people with higher ideals aren't influenced strongly by the traits of their targets. Participants with higher ideals who pick nobody likely pick nobody because nobody meets their high standards. Clearly the choice-based, correlational measure fails to accurately reflect such individuals' preferences, and hence it should be abandoned in favour of other measures. This insight is not novel; for instance, Landolt, Lalumière and Quinsey (1995) decided to ask participants whether they would prefer a short or long term relationship with each target, rather than whether they would accept or reject them, because they expected that too many participants would reject all of their targets, thus yielding no variance for them to analyse.

The intermittent success in gender, ideal standards, and short-term interest in predicting participants' implicit preferences and pickiness is consistent with the evolutionary

model expounded in the introduction section. However, vignettes only differed substantially along one dimension – attractiveness. As argued by Feingold (1992), more accessible traits are likely to impact upon mate choice far more substantially than inaccessible ones. Thus, because the descriptions were kept similar in overall positivity and there was no other available information about targets, individuals may have had no option but to choose based on attractiveness, regardless of their own personal preferences. A participant who especially valued trustworthiness, charm, and wealth would still have chosen predominantly based on attractiveness, as that is the information that was made available to him or her.

In order to attempt to replicate the intermittent effects that gender, short-term interest and ideal standards had upon choices in Study 1 more reliably, a second study was conducted using targets that varied more strongly in the positivity of their descriptions. In addition, a different set of dependent variables were adopted that should not suffer from the same problems of restriction of range that the perception-choice correlation in study 1 suffered from.

CHAPTER 4: STUDY 2

In Study 1 the consequence and control manipulations did not have any effect on participants' pickiness or preference for attractive targets. However, in contrast to Eastwick and Finkel's (2008) null findings, women were pickier and target attractiveness had less impact upon their reported desire to contact targets compared with men. Moreover, both of these sex effects were mediated by women's lower short-term interest. Participants' ideal standards for attractiveness predicted choosing more attractive targets. Nevertheless, these findings were not consistent across both indices of pickiness and both indices of preference for attractive targets: thus, Study 2 attempted to replicate them with a more powerful and ecologically valid design.

Feingold (1992) commented that individual differences in preferences for a trait should influence choice to the extent that people possess discriminatively useful information about targets on multiple important dimensions. In Study 1, individual and gender differences in preference for attractive targets may have been depressed, because although participants were given information pertaining to both personality and attractiveness, the personality descriptions were kept intentionally vague with little variance in positivity. Thus, it is not surprising that participants' choices and reported desire were based strongly on target attractiveness.

In the real world, however, mate selection is typically based on information on several dimensions. Moreover, few individuals are 10's on every dimension, so mate selection often involves trade-offs. For example, Mary values sensitivity and good looks in a mate. Because she is not perfect she probably cannot attract the rare man who is both maximally sensitive and attractive. Mary must decide whether attractiveness or sensitivity is more important to her, as potential mates will have each trait in varying quantities. Indeed, Fletcher, Tither,

O’Loughlin, Friesen and Overall (2004) found striking gender differences when they forced participants to choose between a target that combined a high level on one ideal dimension (such as attractiveness or status) with a low level on the other, and a target with the opposite pattern of trade-offs. The forced-choice, trade-offs paradigm aligns well with common usage of the term “preference”. Almost everybody likes both cake and ice-cream. Hence, it would be rather uninformative to offer participants cake and observe their reactions – at best it would reveal which participants were hungry and not dieting. It would be much more informative to instead ask participants which of the two they would *prefer*, if asked to pick just one, or to rank their preferences.

As in Study 1, participants in Study 2 were asked to report their ideal standards, to envision themselves visiting an internet matchmaking website and to examine ten fictional profiles. Study 2 adapted Fletcher, Tither, O’Loughlin, Friesen and Overall’s (2004) forced-choice paradigm. Profiles alternated between depicting a physically attractive yet cold target and a warm and trustworthy yet unattractive target. Participants rated the targets as they were presented and following the presentation of every second target participants indicated which of the preceding two individuals they would prefer to obtain a match with. Following this, as in Study 1, individuals were asked to rate their desire to contact each individual and whether they would in fact contact that individual. In addition participants were asked to rate expected enjoyment if in a short term or long term relationship with each target.

Study 1 suggested that men picked more targets and desired attractive targets more in part because they were more interested in short-term relationships. Although Fletcher et al.’s finding that men were more likely to pick attractive, cold targets than women did not extend to casual dating contexts, the framing of the casual dating context in their study (it was presented in contrast to a short-term fling or a long-term relationship) may have led participants to consider only the casual date itself without also considering whether the date

might eventually result in a relationship. However, participants in the present study may have considered their choice to contact an individual as a means to any number of romantic ends, including a sexual fling or a long-term partnership. For example, Mary is very interested in finding a husband and deems Rob, who is homely and boring yet kind, to have great long-term mate potential. If asked to choose which individual she would rather engage in a casual date, short-term fling, and long-term relationship with, she might conclude from the framing of the question that the three contexts were mutually exclusive alternatives, and might therefore report that she would prefer a date with Jim, who is cold but exciting, to Rob. Nevertheless, Mary would presumably rather contact Rob in the internet dating scenario due to her preference for a long-term relationship. Thus, it is expected that Study 2 will replicate Study 1's findings: men will be less picky and will base their decisions on target attractiveness more than women, in part, because they are more interested in short-term relationships.

One way to better tease apart participant's differing goals in picking targets is to simply ask them, so in Study 2 I included items asking participants how much they expected they would enjoy a) a short-term sexual fling and b) a long-term committed relationship with each target, along with the desire and choice items from Study 1. It makes sense that people with a higher degree of interest in short-term relationships would be especially prone to anticipate enjoying a short-term, sexual liaison with targets, would be less picky and would exhibit a greater implicit preference for attractiveness. Moreover, men should report both a higher interest in short-term relationships and greater anticipated enjoyment in short term relationships across targets. This, in turn, should lead men to be less picky and express a greater implicit preference for attractiveness.

In Study 1 higher ideal standards for attractiveness predicted stronger preferences for more attractive partners regardless of experimental condition. I expected that this finding

would be replicated in Study 2. In addition, although the hypothesis that the effect of sex on mate decisions would be mediated by ideal standards was not supported in Study 1, I expected that the improved methodology of this study would increase the chances of confirming the mediational model.

The hypotheses for Study 2 were:

1. Men should be less picky and exhibit a stronger preference for attractive/cold, rather than unattractive/warm targets, than women.
2. Participants' ideal standards for warmth/trustworthiness and attractiveness should predict their preferred targets. Moreover, higher interest in short-term relationships should predict stronger preference for attractive/cold targets and less pickiness.
3. Men's lack of pickiness and stronger preference for attractive/cold targets should be mediated both by their greater interest in short-term relationships. Moreover, ideal standards should mediate men's stronger preference for attractive/cold targets.

Method

Participants

Students at the University of Canterbury Student's Association were approached and asked to take part in a short questionnaire study. Participants were told they must be 18 - 35 years old and heterosexual to take part. Thirty-five male and 36 female students were recruited this way. Ages ranged from 18 to 35 with a mean of 23.1 (SD = 4.1). Participants were paid \$10 in petrol vouchers for their time.

Materials

Initial scales. Participants were given a multi-part questionnaire, with demographic questions pertaining to age, relationship status and gender, and containing both the self and partner short forms of the Ideal Standards scale (Fletcher, Simpson, Thomas & Giles, 1999), and Rosenberg's Self Esteem Scale (1965). These sections of the questionnaire were identical to those used Study 1.

Instructions. Participants were given a page of instructions (Appendix 1B) similar to the two pages of instructions in Study 1. As in Study 1, participants were instructed to envision a hypothetical scenario where they were single and had just completed a 10-page short answer and multi-choice questionnaire and uploaded a picture of themselves at an internet dating service. Participants were told they would be presented with ten profiles of hypothetical singles living near them who were also using the dating service, and that each person's profile contained a picture and a brief summary written by a matchmaker at the dating service based on his or her questionnaire responses. Participants were informed they would be asked to rate the ten singles, and would later be asked which, if any, they would choose to contact. As in the low consequence and control condition in Study 1, participants were told that they would only be able to make contact with targets that they chose and who chose them in return, and that beyond initial email contact, pairs could choose between themselves whether to meet in person. The instructions then prompted participants to predict their intentions towards pursuing short- and long- term relationships in the hypothetical scenario from 1 (Not at all interested) to 7 (Very interested).

Vignettes. Participants were presented with ten vignettes composed of a colour photograph measuring 100mm tall and 64-82mm wide (Appendices 3C-3D), and a one

paragraph, third-person description (Appendix 2B). Images were drawn from the same pool of twenty men and twenty women as Study 1. These were obtained from a database on the Productive Aging Laboratory website (<https://pal.utdallas.edu/facedb/request/request>) (Minear & Park, 2004), and actor agency websites including New Faces (<http://www.newfaces.com/>). These images had already each been independently rated for attractiveness by ten male and ten female raters before Study 1. The five highest- and five lowest-rated faces in each gender were selected for use in Study 2 so that a distinct group of attractive and unattractive targets were represented.

Ten third-person, short descriptions of hypothetical singles were composed by the experimenter. Each description contained information relevant to the target's warmth/trustworthiness and status/resources, and was composed using the list of 49 empirically-derived mate qualities in Fletcher, Simpson, Thomas and Giles' (1999) study as a reference. Descriptions were manipulated such that singles all possessed positive status and resources qualities from Fletcher et al.'s study (using either the terms from the list or synonyms), along with having a high status or income job. Similar to the descriptions used by Fletcher, Tither, O'Loughlin, Friesen and Overall (2004) however, half of the singles were described as possessing the positive warmth/trustworthiness items from the 49-item list while the other half were described as lacking in those same qualities or as possessing opposite, unpleasant traits. An example of a low warmth/trustworthiness description follows:

Kate/Rob is unreliable and inconsiderate towards others. Her/his property managing company shows potential to do very well. She/he lives in a nice house in a nice part of town, and is financially secure.

Ten vignettes of each gender were generated by matching each vignette with either an attractive or unattractive target (as shown by the photograph). Each decision that the

participant made contrasted a forced choice between one target with low warmth and high attractiveness, and another target high in warmth and low in attractiveness.

Target rating questions. Each target vignette had four questions attached. The first three were Likert scale measures, asking participants to rate the target's attractiveness, warmth/trustworthiness, and status/resources (or potential to obtain them), on a scale from 1 to 7, where 7 indicated more of the trait. Participants were asked to indicate each target's age in years. In addition, every second vignette had a fifth, forced-choice question, asking participants which of the immediately preceding two individuals they would prefer to obtain a match with. They were instructed to choose one and only one.

Target choice form. After completing this task, participants were presented with a form listing the ten names associated with each vignette with four items corresponding to each. The first two items asked participants to rate the degree to which they would enjoy being in a) a short-term, sexual relationship, and b) a long-term, committed relationship with the target, from 1 (no enjoyment) to 7 (a great deal of enjoyment). Participants were also asked to rate their *desire to contact* each of the individuals given the scenario outlined, from 1 (no desire) to 7 (a great deal of desire). Lastly, participants were asked to indicate whether they would in fact elect to contact any of the ten targets in the hypothetical scenario, by ticking either yes or no for each target.

Procedure

Participants completed all scales in seating around the first ground-floor lobby or in a first-floor common room in the University of Canterbury Students' Association building. Once participants agreed to take part, they were given the questionnaire booklet and asked to take it to one of the unoccupied couches to fill it in. The questionnaire booklet began with an information sheet explaining briefly what participation would involve and that completion of

the questionnaire would be taken as consent to participate. Following this, the booklet contained, in order: demographic questions, self and ideal subscales of the ideal standard short forms, Rosenberg's self esteem scale, instructions sheet, vignettes and target rating questions, and the target choice form. Participants were asked to refrain from discussing the questionnaire or otherwise conversing with others while completing it. They were also instructed to read all instructions carefully and to check that they had answered every question before handing it back to the researcher. Once participants returned the questionnaire, they were thanked, given a debriefing sheet explaining the purpose and hypotheses of the study, and paid.

Results

This section will initially list the outcomes of the manipulation checks establishing that vignettes did offer perceived trade-offs between attractiveness and warmth/trustworthiness. Following this, I will discuss the results pertaining to pickiness. This will address whether women were pickier than men and whether women's higher pickiness is mediated by their lower interest in short-term relationships. Following this I will turn to the results for preference for attractive and warm/trustworthy targets. In this section I will examine whether men exhibited a stronger preference for attractive/cold targets than women and whether ideal standards predicted trade-off preferences. I will also investigate whether interest in short-term relationships and ideal standards mediated men's stronger preference for attractive/cold rather than homely/warm targets.

Manipulation Checks - Attractiveness, Warmth, and Status of Targets

As the images associated with each vignette differed across male and female participants, manipulation checks were conducted separately for men and women.

Target rating data was transposed in SPSS so that participants were treated as variables and targets as cases, and a reliability analysis using Cronbach's alphas was conducted in order to gauge participants' agreement regarding targets' attractiveness and warmth. Both women ($\alpha = .97$) and men ($\alpha = .98$) showed a very high degree of agreement regarding attractiveness. Similarly, both women ($\alpha = .96$) and men ($\alpha = .97$) agreed strongly regarding target warmth and trustworthiness.

Mean attractiveness, warmth/trustworthiness, and status/resources ratings were calculated for each target across participants. Male targets manipulated to be cold and attractive were rated by women as less warm (means = 2.88 vs. 4.79; $F(1, 8) = 65.8, p < .05$) and more attractive (mean = 4.63 vs. 2.81; $F(1, 8) = 27.6, p < .05$) than those manipulated to be warm and homely. Female targets manipulated to be cold and attractive were rated by men as less warm (means = 3.03 vs. 5.05; $F(1, 8) = 69.5, p < .05$) and more attractive (means = 5.29 vs. 2.98; $F(1, 8) = 36.5, p < .05$) than those manipulated to be warm and homely. As intended, targets were rated as having high status/resources (means = 5.46 for male targets, 5.35 for female targets).

Results for Pickiness

Were women pickier than men? As in Study 1, I used mean desire to contact and number of targets picked as measures of overall pickiness. This was done independently for the warm/homely and cold/attractive targets. Interestingly, the number of warm/homely and cold/attractive targets picked were uncorrelated at the zero-order level ($r(69) = .19, n.s$).

As predicted, women reported lower mean desire ratings overall than men (means = 2.52 vs. 3.53 respectively; $F(1, 69) = 19.2, p < .05$). A 2 (gender) X2 (target type) mixed ANOVA was conducted with number picked as the dependent variable. Results are displayed in Table 6. As hypothesized, a significant main effect for sex indicated that men picked more

Table 6. Number of targets picked as a function of target type and participant sex.

	Sex	
	Women	Men
Warm/Homely	1.14	1.4
Cold/Beautiful	1.19	2.71

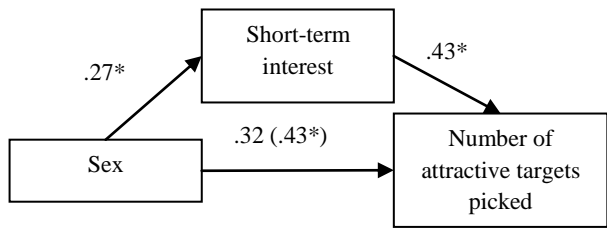


Figure 6. Pattern of zero-order correlations and beta weights supporting short-term interest mediating sex's effect on number of attractive/cold targets picked. * denotes $p < .05$.

targets than women ($F(1, 67) = 12.2, p < .05$). Also as predicted, a significant gender X target type interaction suggested that this sex difference was largest for the attractive/cold targets ($F(1, 97) = 8.24, p < .05$).

Was greater short-term interest associated with lower pickiness? As predicted, participants who reported more interest in short-term relationships gave higher mean desire ratings than those who reported less interest ($r(68) = .55, p < .05$). Participants more interested in short-term relationships also chose more targets ($r(68) = .51, p < .05$). Moreover, higher short-term interest predicted picking more attractive/cold targets ($r(68) = .52, p < .05$), but not homely/warm targets ($r(68) = .22, n.s.$).

Did short-term interest mediate sex's effect on pickiness? I also predicted that men would pick more attractive targets than women, and that this effect would be mediated by men's greater interest in short-term relationships. As shown in figure 6, the results were consistent with Baron and Kenny's (1986) four requirements for mediation. The size of the direct path from sex to number of attractive targets picked dropped significantly when short-term interest was controlled for, although it remained positive and significant (Sobel's test = 2.03, $p < .05$), suggesting that the mediation was partial.

Summary of results for pickiness. As predicted, men were less picky than women. Men indicated more desire to contact targets and decided to contact more cold and beautiful targets than women. Consistently, these targets (cold and beautiful) were also rated as more enjoyable short-term partners by men. Participants who reported more interest in short term relationships reported more desire to contact targets and picked more cold/attractive targets. Moreover, men's reduced pickiness relative to women was mediated by their greater interest in short-term relationships.

Results for Preferences for Attractive Targets over Warm Targets

Did men have a stronger preference for attractive targets? Two indices of the degree to which a participant revealed a preference for attractiveness over warmth were calculated. First, participants' five forced-choice responses were converted into a percentage, in which 100% indicated having chosen the attractive/cold target over the homely/warm target every time. Second, an index was calculated using participants' choices to contact or not contact each of the ten targets. We subtracted the number of warm/homely targets a participant elected to contact (out of five) from the number of cold/beautiful targets, yielding a score between 5 (elected to contact all the attractive targets and none of the warm ones) and -5 (elected to contact all of the warm targets and none of the attractive ones)¹.

As predicted, men's choices revealed a significantly greater preference in the forced-choices for attractiveness over warmth ($M = 64.3\%$) relative to women ($M = 40.6\%$; $F(1,69) = 10.8, p < .05$). Moreover, when men freely chose any of the 10 individuals in the scenarios,

¹ We also repeated some analyses using two alternatives to this index: number of attractive/cold targets picked as a percentage of total number of targets picked, and also number of attractive/cold targets picked, whilst simultaneously controlling for total number of targets picked. However, as the results were not substantially different, we opted to use the relatively simple difference score.

they chose more attractive/cold targets than homely/warm targets (mean difference = 1.31), and they did this significantly more than women ($M = .56$; $F(1, 69) = 8.24, p < .05$).

Did ideal standards predict preferences for attractive over warm targets? According to a hierarchical multiple regression analysis, higher ideals for warmth/trustworthiness ($Beta = -.26, p < .05$), and lower ideals for attractiveness ($Beta = .56, p < .05$) both simultaneously predicted making more forced-choices in favour of attractive targets. Similarly, higher ideals for attractiveness ($Beta = .41, p < .05$) predicted electing to contact more attractive than warm targets, as did lower ideals for warmth/trustworthiness, albeit nonsignificantly ($Beta = -.20, n.s.$). The interaction of the two ideal standards was unrelated to both forced-choices ($Beta = -.11, n.s.$) and electing to contact more attractive/cold than homely/warm targets ($Beta = -.07, n.s.$).

Did short-term interest predict preferring attractive targets to warm targets? I predicted that participants who reported more interest in short-term relationships would show a greater preference for attractive targets. Consistent with this prediction, both men ($M = 5.38$ vs. 2.55 ; $F(1, 8) = 74.12, p < .05$) and women ($M = 3.42$ vs. 1.84 ; $F(1, 8) = 26.5, p < .05$) indicated that they would enjoy a short-term relationship with the attractive/cold targets more than the homely/warm targets. Moreover, as predicted, greater interest in short-term relationships significantly predicted the number of attractive targets picked minus number of warm targets picked ($r(68) = .32, p < .05$). Greater short-term interest also predicted the percentage of forced-choices in favour of the attractive/cold target, but not significantly ($r(68) = .20, n.s.$).

Did ideal standards mediate men's greater preference for attractive targets? Ideal standards for attractiveness and warmth did not mediate sex's effect on either the forced-choice or free-choice indices of preferences, as sex was unrelated to ideal standards for

attractiveness ($r(69) = .03, n.s.$) or warmth/trustworthiness ($r(69) = -.13, n.s.$). Contrary to the hypotheses, sex and ideals had independent effects on participants' preferred targets.

Did short-term interest mediate men's greater preference for attractive targets? The hypothesis that short-term interest would the effect of sex on the forced-choice and free-choice indices of preferences was unsupported for either measure. As stated above, greater short-term interest only marginally predicted forced-choices: thus there was no significant drop in the direct path from sex to forced-choices when controlling for short-term interest (Sobel's test statistic $= .85, n.s.$). Although, as summarised above, men (relative to women) and those with greater short-term interest did pick significantly more attractive/cold than homely/warm targets in the free-choice questions, and men also reported more short-term interest than women, controlling for short-term interest did not significantly reduce the direct path from sex to free-choice preferences (Sobel's test statistic $= 1.57, n.s.$), violating Baron and Kenny's (1986) fourth assumption of mediation.

Summary of results for preference for attractive targets over warm targets. As predicted, men, compared with women, preferred attractive targets to warm targets across both the forced-choice and free-choice measures. Also as predicted, participants reporting higher ideal attractiveness or lower ideal warmth/trustworthiness more strongly preferred attractive to warm targets according to the forced-choice measure, but the effect for free choices failed to reach significance. Higher short-term interest predicted a stronger preference for attractive over warm targets for the free-choice measure but the effect was not significant for forced choices. Neither of the other two mediation hypothesis found support: ideal standards and short-term interest both failed to mediate men's greater preference for attractive targets relative to women.

Discussion

The hypothesized main effects all emerged in Study 2, though some failed to reach significance. Men picked more targets, reported more desire to contact targets (especially attractive/cold targets) and expressed a stronger preference relative to women for attractive/cold targets over homely/warm targets, across both the free-choice and forced-choice measures. Individuals who reported more interest in short-term relationships also reported more desire to contact targets, picked more attractive/cold (but not homely/warm) targets, and preferred attractive/cold targets to homely/warm targets (although this last effect only reached significance for the free-choice preference measure). Participants' ideal standards also predicted their preferred targets, although the free-choice index of preference for attractiveness over warmth was only associated with ideal attractiveness and not warmth/trustworthiness.

However, of the three mediation hypotheses, only one received empirical support. Men's greater interest in short-term relationships relative to women mediated their relatively low pickiness but neither ideal standards nor short-term interest mediated men's greater preference for attractive targets relative to women.

The main effects above replicated Study 1: participants' mate choices in a hypothetical internet dating scenario were consistent with the sex differences predicted by both evolutionary psychology and with their own ideal standards. This is contrary to Eastwick and Finkel's (2008) study in which participants' choices were unrelated to their stated preferences or sex.

However, a surprising result from Study 1 was also replicated in Study 2. In both studies, men and women did not report differing ideal standards for attractiveness or warmth/trustworthiness. Although warmth/trustworthiness is generally rated very highly by

both sexes (Fletcher, Tither, O'Loughlin, Friesen, Overall, 2004), higher male ideal standards for attractiveness are a well-replicated finding, as discussed in the introduction. Indeed, even Eastwick and Finkel's (2008) study obtained sex differences in self-reported ideal standards. Thus, the question is raised why I obtained this null result here.

One possibility is that participants were not motivated to respond accurately to the ideal standards questions because of the demand characteristics of knowing they were soon going to be rating vignettes or engaging in a hypothetical internet dating scenario. It is hard to predict how this might have influenced the results, but if it caused them to be more concerned about social desirability, and if this concern led men to underreport their ideals for attractiveness more than women, then that might have reduced the sex difference. This hypothesis might be tested by including a social desirability scale in any similarly-designed study.

It appears that adopting the forced-choice, trade-offs paradigm improved the reliability of the findings regarding participant's implicit preferences. While sex and ideal standards each only predicted one of the two measures of implicit preferences used in Study 1, they each predicted both measures used in Study 2 (although only ideal attractiveness, not warmth/trustworthiness, predicted the free-choice measure).

Unfortunately, only one of the three mediational models was supported. Clearly, the lack of a sex difference in the ideal standards discussed above prevented these models from being supported. It is less clear why short-term interest did not mediate men's greater preference for attractive/cold targets, as Study 1 was able to obtain a similar relationship using the desire-based index of preference. It may be that the effects are relatively small and the study lacked sufficient power to reliably detect them. Short-term interest was correlated $r=.20$ with forced-choice preference for attractiveness over warmth, but this correlation did

not obtain statistical significance ($p = .09$). A larger study may be able to more reliably indicate the strength of any mediation relationship, if there is one. One of the mediation models was supported, however: men were more interested in short-term relationships, which explained some of the lack of pickiness that males exhibited relative to women. This replicated Study 1, and suggests that this relationship may be robust in internet dating settings.

CHAPTER 5: GENERAL DISCUSSION

The two studies described above addressed five research questions. First, do within-participant correlations between a participant's perceptions of a target and whether they chose that target suffer from restriction of range problems? Second, do men have a stronger preference for attractive targets than women? Third, do people's ideal standards guide their choices in internet dating contexts? Fourth, do the control and consequence of dating scenarios moderate the relationship between sex and ideal standards have with preferences? And fifth, are sex differences in internet dating choices mediated by short-term interest or ideal standards? I will summarise the results relevant to each research question in turn. Following this, I will attempt to integrate these findings with the literature on mate selection. Finally, I will discuss the limitations of the two studies and the avenues for further research.

Do Within-Participant Correlations between Target Traits and Binary Choices Suffer from a Restriction of Range Problem?

Eastwick and Finkel (2008) used within-participant correlations between participants' ratings of each speed dating partner on a given trait and whether or not participants chose that partner. Their interpretation of this correlation was that it indicated the degree to which that the trait ratings influenced choices for the participant; a low correlation meant that the trait rating was not influential, while a high correlation meant the trait was.

As hypothesized in the introduction, the number of targets picked by a participant was associated in a curvilinear fashion with the within-participant correlation between a target's attractiveness rating and whether the participant chose them (see Figure 5, Study 1). This relationship took the form of an inverted "U" such that participants who chose to contact (or not to contact) very few targets had a weaker preference for attractiveness according to the correlational measure.

This highlights a problem with within-participant correlational measures of the association between target traits and choices, as used in Eastwick and Finkel's (2008) study. As people's ideals increase past a certain point, a dwindling number of targets are sufficiently attractive to be worthy of consideration. Consequently, few targets are picked and restriction in variance results in a low correlation between a target's attractiveness and whether the participant chose them. However, this is problematic because the participant's high ideals led them to pick few targets, yet their low score on the correlational measure misleadingly suggests that their choices were not influenced by their ideals.

Omitting participants that picked none or all of the targets from the analysis, as Eastwick and Finkel (2008) did, also fails to address this problem, as this excludes the participants with especially high and low standards, which is likely to preclude meaningful findings.

This confirms the concerns raised by Landolt, Lalumière and Quinsey (1995), that in some mating contexts, having participants choose which vignettes they would opt to date, contact, or have a relationship with leads many participants to pick too few of the targets to obtain a readily interpretable result. This concern, incidentally, led the authors to ask participants to simply choose whether they would rather engage in a short-term or long-term relationship with each target, rather than asking them whether they would engage in a relationship with them at all.

Did Sex Differences in Mate Preferences Consistent with Evolutionary Theory Emerge?

Overall, men, compared with women, showed a stronger preference for attractiveness but a weaker preference for warmth and trustworthiness. In Study 1, men expressed significantly more desire to contact attractive targets than women did. In Study 2, men were more likely to pick the attractive/cold targets over the homely/warm targets in response to the

forced-choice questions than were women. Moreover, men picked attractive/cold targets more than homely/warm targets when able to freely pick any of the ten targets, and did this to a significantly greater extent than did women.

This pattern of results is consistent with the notion that because women are the more investing sex, they have evolved to focus relatively more than men on mate qualities indicative of a good investment, as opposed to indicators of good genes (Trivers, 1972; Gangestad & Simpson, 2000). As warm and trustworthy mates are more likely to volunteer aid in childrearing, this trait is relatively more valuable for women and it pays them to trade off attractiveness and vitality for warmth more readily than men (Li, Bailey, Kenrick & Lisenmeier 2002; Fletcher, Tither, O'Loughlin, Friesen & Overall 2004).

Unfortunately, in neither Study 1 nor Study 2 did men report a higher ideal standard for attractiveness than women. This is a puzzling finding because many studies, as canvassed in the introduction, including Eastwick and Finkel's (2008) speed dating study, have found that men value attractiveness more than women. As discussed earlier, this could be due to low statistical power and type II error, or it could be due to a methodological peculiarity of both studies, including demand characteristics. Although participants in Eastwick and Finkel's study knew they were going to be rating their speed-dating partners at the event, participants' self-reported preferences were measured separately and prior to the event itself, and this may have made those questions appear more important, bringing participants to answer them more carefully and truthfully.

Did Ideal Standards Predict Preferred Targets?

As hypothesized, participants' ideal standards generally predicted their preferred targets. In Study 1, participants with higher ideal standards for attractiveness were more

likely to elect to contact attractive targets. In Study 2, participants' ideal standards for warmth/trustworthiness and attractiveness predicted the participants' choices.

This finding runs contrary to Eastwick and Finkel's (2008) report that stated preferences did not predict speed-dating choices, and, at first glance, appears to support the evolutionary theory that humans have evolved mate preferences in order to actually pick mates that will maximise their reproductive success, as explicated by parental investment theory (Trivers, 1972).

Did Control and Consequence Moderate any Other Effects?

Unfortunately, the control and consequence manipulations in Study 1 failed to account for any significant variance in any of the dependent variables, at the main effect or interaction level, or after controlling for additional variables.

One reason why the manipulations had no effect may be that participants were simply not sufficiently aware of the specific wording of the hypothetical internet dating terms of service. This could be due to low participant motivation, instructions that were not explicit enough, the instructions being too complicated, or a combination of these factors.

That said, it may be that although it is adaptive to respond to low consequence or control contexts by lowering standards strategically, people have not evolved a specific adaptive mechanism to monitor the control and consequence afforded by a situation and automatically shift mate preferences. Perhaps this strategy would need to be consciously learned and deliberately implemented by people based on a careful appraisal of the mating context. Participants may not have been sufficiently motivated in the present hypothetical study to think carefully about the strategic approach, and thus the consequence and control conditions had no effect on their choices.

A further possibility is that people may have evolved to actively avoid courtship with individuals that fail to meet their standards. Internet- and speed-daters enjoy a degree of privacy from their initial dating partners. As potential mates likely knew where our ancestors lived, however, the prospect of unwanted romantic attentions (being stalked) may have punished people (particularly women) that were too open-minded about suitors. Therefore, although consequence-free contexts for dating now exist, we may have inherited an active avoidance mechanism, such as disgust, that prevents us from broadening our romantic horizons very much, even though it may be adaptive to do so.

Did Short-Term Interest or Ideals Mediate Sex Differences?

The three mediation relationships hypothesized were partially supported. Greater interest in short-term relationships generally mediated men's greater number of targets picked relative to women.

Overall, these results are consistent with the evolutionary theory that the preferred reproductive strategy for men is to engage in short-term relationships with nubile women, but that this strategy is less beneficial to women's reproductive success (Trivers, 1972; Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Fletcher, Tither, O'Loughlin, Friesen & Overall, 2004).

Implications for Evolutionary Models of Mate Selection

Taken together, the above findings suggest that choices in internet dating are influenced by the user's sex, as well as his or her individual ideal standards. Conflicting with Eastwick and Finkel's study, these findings are consistent with an evolutionary model based on Triver's (1972) parental investment theory. Because women invest more (including nine months of gestation) in any given offspring than men, men stand to benefit more than women

from multiple, low-investment copulations with many mates over their reproductive lifespan. As short-term mating is less beneficial for women, the opportunity costs of long-term mating are commensurately lower, and so women have evolved to focus relatively more on long-term, committed relationships.

As covered in the introduction, ideal standards theory (Fletcher, Simpson, Thomas & Giles, 1999) posits that individuals have evolved consciously accessible ideal standards in order to implement the mating strategies favoured by natural selection. The fact that individuals' stated ideals predicted their choices in both studies supported the notion that individuals are, in fact, aware of their preferences. However, unexpectedly, participants' ideal standards did not mirror the obtained gender differences discussed immediately above. Therefore it appears that individuals' consciously articulated ideal standards and sex had independent effects on their preferred targets.

However, the finding that men did not have higher ideals for attractiveness was peculiar. As discussed in the introduction, many studies have replicated this sex difference in self-reported ideals. Whether this is because men and women were differentially influenced by demand characteristics and/or social desirability, is unclear.

It is worth reiterating that neither evolutionary theory nor parental investment theory necessarily imply that individuals must be aware of their mate preferences. Psychological mechanisms can operate as desires, attractions, and gut-level emotions, and may or may not be able to be consciously articulated (Buss & Schmitt, 1993). Nevertheless, consistent with ideal standards theory, it appears that they are aware of their own ideal standards to a sufficiently good level to reliably report them.

Implications for Speed-dating Studies

What conclusions, if any, can be drawn about speed dating? The evidence provided by these studies is consistent with other research suggesting that when looking for dates, men and women may be looking for different things (Townsend & Levy, 1990; Townsend & Wasserman, 1998). Men reported more interest in short term relationships, and this lead them to pick more targets than did women. Moreover, men picked more closely based on target attractiveness. This research is consistent with the notion that when looking for dates, men look for attractive partners (short-term or long-term) while women seek high-status long-term partners (Townsend & Levy). This is an important insight for speed and internet dating. It is important that future speed dating studies ensure that they have adequate measures to gauge participants' interest in long- and short- term relationships in the speed-dating context.

Feingold (1992) argued that when choosing a mate, people tend to base their decisions most closely on accessible traits. Funder's (1995) realistic accuracy model (RAM) is also relevant here. In order to be able to judge a target's personality accurately, a target must exhibit cues relevant to that trait that are available to the perceiver, and then are detected and utilized. Although not strictly a personality trait, attractiveness is a chronically available and easily detected trait. Raters tend to have quite high levels of consensus in rating a stranger's attractiveness (Marcus & Miller, 2003), and this was also true of the pilot ratings for the faces used in the current study.

On the other hand, four minutes is probably not long enough for a speed dater to get an accurate impression of a target's warmth and trustworthiness. While discussing their dance study, Walster, Aronson, Abrahams and Rottman (1966) speculated that 2 ½ hours might not be enough time to make such a judgment. Indeed, the very existence of a preference for

trustworthiness implies the existence of deceitful individuals, and game theoretical considerations (for one account, see Dawkins, 1976) suggest that women may have evolved to coyly insist on lengthy courtships. This behaviour obliges men to demonstrate their commitment, as mere appearances are not convincing enough to wager one's reproductive future on. In other words, the relevant indicators of warmth and trustworthiness only occur occasionally, and they may not be available during a short date.

These factors all suggest that warmth and trustworthiness may be a difficult trait to accurately assess in a speed-dating context. Indeed, people show quite poor levels of accuracy in reading the minds of strangers (Thomas & Fletcher, 2003) or judging the romantic interest of strangers (Place, Todd, Penke & Asendorpf 2009). The accuracy of the former improves with increasing relationship duration and commitment. As argued by Fletcher, Simpson, Thomas & Giles (1999), it is likely that different ideals exert their effects at different stages of relationship development. In speed-dating situations, attractiveness enjoys an advantage due to its high salience and observability.

Because it would have been so bizarre to read a first-person profile where an individual described him or herself as cold, the decision was made to have the profiles in Study 2 purportedly written by staff at the dating website. Following this, it seems very likely that individuals would be labouring to make themselves as socially desirable as possible during a speed-dating event.

Status, on the other hand, is somewhat more easily judged in a target, even based on as little information as a photograph (Mast & Hall, 2004). Nevertheless, it seems plausible that the status and resources of a university sample may suffer from restricted range (Feingold, 1992).

Because relevant and available information regarding warmth/trustworthiness and status/resources may be somewhat lacking in university-based speed-dating events, it may be that people are not able to exercise their own personal preferences – and instead default to the attractiveness criterion (Kurzban & Weeden, 2007). As individuals have no alternative criteria to pit attractiveness against, they pick suitably attractive individuals regardless of their other preferences. This would explain Kurzban and Weeden’s finding that participants’ advertised preference predicted their choice of speed-dating event (for instance, based on ethnicity) to attend, but did not predict their choice of dates within the event.

Limitations of the Present Research

First, both studies involved a hypothetical internet dating scenario and did not measure actual speed-dating choices. Although participants were asked to imagine who they would pick if they were in the hypothetical dating scenario, their ability to do this accurately is exactly what was called into question by Eastwick and Finkel’s (2008) study. It may be that individuals are able to make hypothetical decisions that are consistent with their preferences, but their speed-dating choices are influenced by features of the speed-dating context that are not present in the hypothetical scenario. Eastwick and Finkel argued that the lack of a link between participants’ ideals and choices may have been due to participants feeling anxious or uncertain about their partners’ feelings towards them. If peoples’ mate choices only follow their ideals when they are in a somewhat cool, rational mindset, then this may explain why the participants in the present two studies made hypothetical choices consistent with their ideals. This research will need to be replicated further to test if these results extend to a more ecologically valid context.

As neither study contained information about targets’ body shape or vitality, it could be argued that they contained insufficient information on the attractiveness/vitality

dimension. However, although bodily and facial attractiveness are both important determinants of mate value, facial attractiveness appears to take priority when both sources of information are made available (Rhodes, Simmons & Peters, 2005; Hassebrauck, 1998).

One weakness of speed-dating and internet-dating studies that may have also influenced the results of the present study is the existence of halo effects (Kurzban & Weeden, 2007; Feingold, 1992). As mentioned in the introduction, women (but not men) rate dominant and high status members of the opposite sex as more attractive. Nevertheless, women rated male target attractiveness lower than men rated female target attractiveness: moreover, the targets' characteristics were carefully controlled in study 2, and target status/resources was kept high, with little variance. Speed-dating and mate-selection studies should statistically control for the ratings on other dimensions when gauging the effect a trait had on an individuals' choices.

Finally, there may also be issues with the internal validity of the control manipulation in Study 1. In order to keep the matchmaking rules identical for participants and their targets, participants in the high control condition were told that they would be matched with a target if that target picked them but they did not pick the target in return. Therefore, participants in the "high" control condition were able to contact whoever they liked, but unlike participants in the "low" control condition, were unable to prevent those they didn't like from contacting them. It is unclear how this feature of the control manipulation would have influenced participants' choices.

Directions for further research

As discussed above, the preferences exhibited by speed and internet daters may be heavily dependent upon the information that is made accessible about their dating partners. Participants whose standards are too high or too low may end up picking all or none of the

targets, unless at least some of the targets are near the threshold of their ideals. Increasing the variance in target attributes may introduce some legitimate decisions for these participants. This may include recruiting speed-dating participants (or stooges) with more variance in status and resources typically found on the college campus. However, it is difficult to see how relevant, believable information can be given regarding a target's warmth and trustworthiness without compromising the ecological validity of the speed-dating scenario.

It is also difficult to conceive of a distribution of target qualities that would present numerous tough choices for all participants, however. Even if targets span the entire range of possible mate values, people with high standards will still only pick the minority near the top of the bunch. Moreover, a speed dating or internet dating event can only realistically present a limited number of choices to participants (perhaps 10-20). More than that, and the task may become too cognitively demanding and participants are likely to switch to a single-criterion heuristic (Lenton, Fasolo & Todd, 2009). Thus, it seems that participants with high standards are predestined to pick very few targets and hence exhibit a low correlation between their yes-no choices and target traits. One possible alternative solution is to somehow group participants with higher standards and mate values in specific speed-dating events. Although this reduction of variance might initially be expected to reduce the association between preferences and choices, in fact the opposite may occur, as participants will be faced with fewer "obvious", non-choices.

An alternative method of tackling this problem may be to accept that people with high standards will pick very few of the targets, but to devise a better statistical measure to account for this. Conceptually, the relationship between a target's traits and the participants' choices can be split into two parts. The first part can be measured with a within-participant correlation coefficient and measures the degree to which a participant's choices track targets' scores across the sample of targets. The second part is a criterion, or bias, and represents the

cut-off above which targets were likely to be chosen by the participant. Participants with high standards who pick no targets and thus exhibit no correlation between target's traits and their choices will nevertheless register as having set a very high criterion and should thus be distinguishable from participants with lower standards. Therefore, the second measure would be an important addition to future studies.

This study was intended as a precursor to an actual speed-dating study. As the contextual manipulations in Study 1 did not pan out it was difficult to justify rushing into an expensive speed-dating study. Nevertheless, a speed-dating study or a study otherwise measuring consequential mating choices (rather than mere hypothetical choices) is required to replicate the present findings and make them relevant to actual behaviour. Although a speed-dating study would be a good way of following up the present study, other methods may introduce a similar level of ecological validity but with more experimental control. For instance, participants could be lead to believe they were engaging in a real speed-dating or internet-dating scenario (thus introducing external validity to the findings) but aspects of the study could be manipulated – for instance, some or all of the dating partners could be fabricated vignettes with carefully controlled levels of mate value, or confederates with manipulated personas. It would be especially promising if the results were replicated using as many methods as possible, giving evidence for the robustness and external validity of the findings (Buss, 1995)

Another important direction for future research would be to investigate whether people choose in the same way in other initial mate selection contexts as they do in speed- and internet-dating. Other mate selection contexts worthy of investigation include relationships initiated in bars or clubs, relationships formed with workmates, and relationships that develop from friendship. As discussed in the introduction, these contexts are more difficult to study for obvious logistical reasons, and the convenience of speed- and

internet-dating research is perhaps its biggest strength. Nevertheless, it needs to be established whether conclusions drawn from speed- and internet-dating can be generalised to other contexts.

Conclusions

The results of the present two studies provide some evidence that individuals' ideals and sex do predict their preferred target in a hypothetical internet dating scenario, in ways congruent with ideal standards theory (Fletcher, Simpson, Thomas & Giles 1999), parental investment theory (Trivers, 1972), and other evolutionary theories of human mate selection (Buss & Schmitt, 1993; Gangestad & Simpson, 2000). Although these findings are limited in their applicability to actual behaviour, they show that individuals can articulate mate choices consistent with their ideals (contra Wiederman & Dubois, 1998). It appears that people do know what they initially desire in a romantic partner, although this study does not show one way or the other whether people actually pick the potential mate they most desire in a real (not hypothetical) speed dating context.

Ideally, this thesis will be followed by research measuring actual behaviour, and therefore, some suggestions were given for further research in initial mate selection research. Specifically, future initial mate selection research should take steps to address the potential problems introduced by within-participant correlational measures of preferences. Moreover, more theoretical explication is needed to relate the speed-dating research to other research investigating the substantial influence that ideals have on relationship development and maintenance. If individuals' ideals do not guide their speed-dating choices, it should be determined whether the same goes for other initial mate selection contexts, and exactly when along the relationship trajectory they begin to take an effect.

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APPENDIX 1A: INSTRUCTIONS (STUDY 1)

Imagine a hypothetical scenario where you are single and using an internet dating service. You have just uploaded a profile containing a brief description and photo of yourself onto the dating website. You are about to be presented with 10 profiles of hypothetical singles, that are also seeking dates and live near you. You will be asked to rate each individual on a number of criteria. You will be also given the opportunity to select any number of individuals who you would like to get to know better. The 10 individuals are also presented with 10 profiles, including your own.

Please rate the degree to which you would be interested in engaging in the following types of relationships if you were in the internet dating scenario described above.

1. A relatively casual, short-term relationship.

Not at all Interested 1 2 3 4 5 6 7 Very Interested

2. A relatively serious, long-term relationship.

Not at all Interested 1 2 3 4 5 6 7 Very Interested

Page 2.

Low control, low consequence. In this scenario, the dating service has a Terms of Use document that must be agreed to in order to protect clients. One way in which it does this is by ensuring that consent is obtained from both partners before contact is made between them. Therefore, if you choose somebody, the dating service checks if the person also chose you. If he or she did (you both picked each other), then the dating service will give each of you the other's email address. You will only be able to contact a given individual if you pick them and they also pick you. To keep dating consensual, the terms of service also stress that

beyond initial email contact, all clients are free to choose whether they want to meet for a date or not.

Low control, high consequence. In this scenario, the dating service has a Terms of Use document that must be agreed to in order to protect clients. One way in which it does this is by ensuring that consent is obtained from both partners before contact is made between them. Therefore, if you choose somebody, the dating service checks if the person also chose you. If he or she did (you both picked each other), then the dating service will give each of you the other's email address. You will only be able to contact a given individual if you pick them and they also pick you. To ensure that all users get a fair chance, the terms of service asks that when clients receive another individual's email address, they commit to meeting in person for a date at least once (coffee, movie or dinner, etc).

High control, low consequence. In this scenario, the dating service has a Terms of Use document that must be agreed to in order to protect the clients. It takes time to get to know somebody. Therefore, in order to give everybody a fair chance, the terms of use require clients to agree to make contact at least once with any clients who express an interest in them. If you choose somebody, the dating service will give each of you the other's email address, regardless of whether they also picked you or not. Similarly, if someone picks you, you will also receive the other's email addresses, regardless of whether you also picked them or not. To keep dating consensual, the terms of service also stress that beyond initial email contact, all clients are free to choose whether they want to meet for a date or not.

High control, high consequence. In this scenario, the dating service has a Terms of Use document that must be agreed to in order to protect the clients. It takes time to get to know somebody. Therefore, in order to give everybody a fair chance, the terms of use require clients to agree to make contact at least once with any users who express an interest in them.

If you choose somebody, the dating service will give each of you the other's email address, regardless of whether they also picked you or not. Similarly, if someone picks you, you will also receive the other's email addresses, regardless of whether you also picked them or not. To ensure that all clients get a fair chance, the terms of service asks that when clients receive another individual's email address, they commit to meeting in person for a date at least once (coffee, movie or dinner, etc).

With this hypothetical scenario in mind, please read each of the 10 paper-clipped profiles that follow. After reading each one, please answer the two questions attached to it. Do not move on to the next profile until you have rated the profile you are currently on.

If you have any questions about this hypothetical scenario at all, please raise them with the experimenter before continuing.

APPENDIX 1B: INSTRUCTIONS (STUDY 2)

Imagine a hypothetical scenario in which you are single and using an internet dating service. You have just uploaded a photo of yourself and have filled in a 10-page dating questionnaire containing a number of multi-choice and short answer questions about yourself on the dating website. You are about to be presented with ten profiles of hypothetical singles, that are also seeking dates and live near you. Each of the ten profiles, along with your own, contain a photo and a short paragraph. The short paragraph is a brief summary written by one of the matchmakers at the dating service, which they have constructed after analysing that person's questionnaire responses. You will be asked to rate each individual on a number of criteria. You will be also given the opportunity to select any number of individuals who you would like to get to know better. The 10 individuals are also presented with 10 profiles, including your own.

In this scenario, the dating service ensures that dating is consensual by ensuring that contact details are only given if both people choose to contact each other. Therefore, if you choose somebody, the dating service checks if the person also chose you. If he or she did (you both picked each other), then the dating service will give each of you the other's email address. You will only be able to contact a given individual if you pick them and they also pick you. Beyond initial email contact, all clients are free to choose whether they want to meet for a date or otherwise pursue the relationship further.

Please rate the degree to which you would be interested in engaging in the following types of relationships if you were in the internet dating scenario described above.

1. A relatively casual, short-term relationship.

Not at all Interested 1 2 3 4 5 6 7 Very Interested

2. A relatively serious, long-term relationship.

Not at all Interested 1 2 3 4 5 6 7 Very Interested

With this hypothetical scenario in mind, please read each of the ten profiles that follow. After reading each profile, please answer all the questions attached to it. Answer all questions on each page before moving to the next one.

If you have any questions at all about this hypothetical scenario, please raise them with the experimenter before continuing.

APPENDIX 2A: TARGET DESCRIPTIONS (STUDY 1)

Hi! I'm working in IT and as a part-time student, hoping to start my own business in a few years if all goes well. In my free time I like to hang out with my friends, go to the movies, read a book, or relax at home with a DVD and good company. People say I'm a bit of a romantic. I have a kitten called Lennon, showing my good taste in music.

Greetings! This is a bit weird for me but I'll try anything once, so here goes! I'm a laid-back person that enjoys being around others. I going out for a drink or brunch on the weekends or at one of my friends' places. I love to paint, sculpt, and photograph. I make enough money from that to get by and I'm hoping to set myself up in a gallery one day. Get in touch!

How's it going? I'm a full time chef working at a posh pizza restaurant in the central city. I'm definitely a foodie and will try any dish once. I'm obsessed with Mediterranean and Japanese food. I try to work out at the gym as often as I can, although my life is really busy at the moment. I just got back from my big OE to Greece, which was great!

Hi, I'm a recent immigrant from Canada currently working part time in a legal firm while studying law. I can be driven and a perfectionist, but am also a good listener and don't cause drama! I don't understand why some people play games or lie – you only live once, so it's best to be true to yourself. If you are looking for good company and warmth, I may be the person for you.

Hello world. My motto is "work hard, play hard". I make a lot of money running my own business during the week, but also like to have fun on the weekend! I live a busy life, but I'm aiming for early retirement and financial independence so that I can travel a lot and maybe settle down somewhere exotic. I love to watch sports and TV housing shows. I'm kind and generous to my friends, especially once you get to know me.

Hello! This is the first time I've done anything like this, so I don't really know what to say... I'm a trusting person who enjoys spending time with friends and good conversation. I love animals and am training as a vet. I'm reasonably easy to please, and am a day-dreamer. Let's meet up for a coffee (my one addiction!).

Hello. I currently work as a policy analyst for the government. My interests include politics, stage theatre and music. I also speak two languages and play the piano. I'm optimistic and positive and am all about keeping it real! If you're interested in learning more about me, let's meet up!

Hi. I'm a caring, loving person. I'm a good listener, and like to help other people with their problems. I work as an accountant, but that's only my job and I try not to let that dominate my life! I play the guitar in a local band, go to the gym whenever I can, and ride everywhere on my bike. Hope to hear from you soon.

Hi! I'm a graphic design contractor, so get to pick my own hours. I spend a lot of time in the city, and enjoy fine dining... and am looking for someone to join me and hopefully be charmed. I am very easygoing and fun – some of my friends would even call me downright silly. Being able to laugh at one's self is one of the most important qualities in a person I think! Give me a call.

Hello there, I'm a regular, friendly person, into sailing and having a good laugh with my friends. Once people get to know me, they quickly find out that I'm a generous, giving, loving person. I work as a database administrator and hope to branch out professionally soon. I'm looking for someone to add some excitement to my life, but also some stability.

APPENDIX 2B: DESCRIPTIONS (STUDY 2)

Kelsey/Jenny is a caring, affectionate and supportive man. He has enjoyed success in his life, and his career as a pharmacist shows promise. He lives in a nice house. He is also driven to increase his earning potential.

Rob/Kate is unreliable and inconsiderate towards others. His property managing company shows potential to do well. He lives in a nice house in a nice part of town, and is financially secure.

Samuel/Sophie is self-absorbed, narrow-minded and emotionally unstable. However, he dresses well and enjoys the finer things in life. An engineer by trade, he intends to travel often.

Perry/Sarah is personable, thoughtful and respectful towards others. He wants to make a difference in the world. He is training towards becoming a doctor, and is somewhat wealthy. He is really interested in overseas travel.

Matthew/Liz is a broad-minded and mature person. He has a warm personality. He is ambitious and driven, with a career as a stockbroker. He owns his own home.

Adam/Wendy is unreliable, immature and unpredictable. He is self-employed, working as a software developer, and has a sizeable income. He lives in an upper-class suburb.

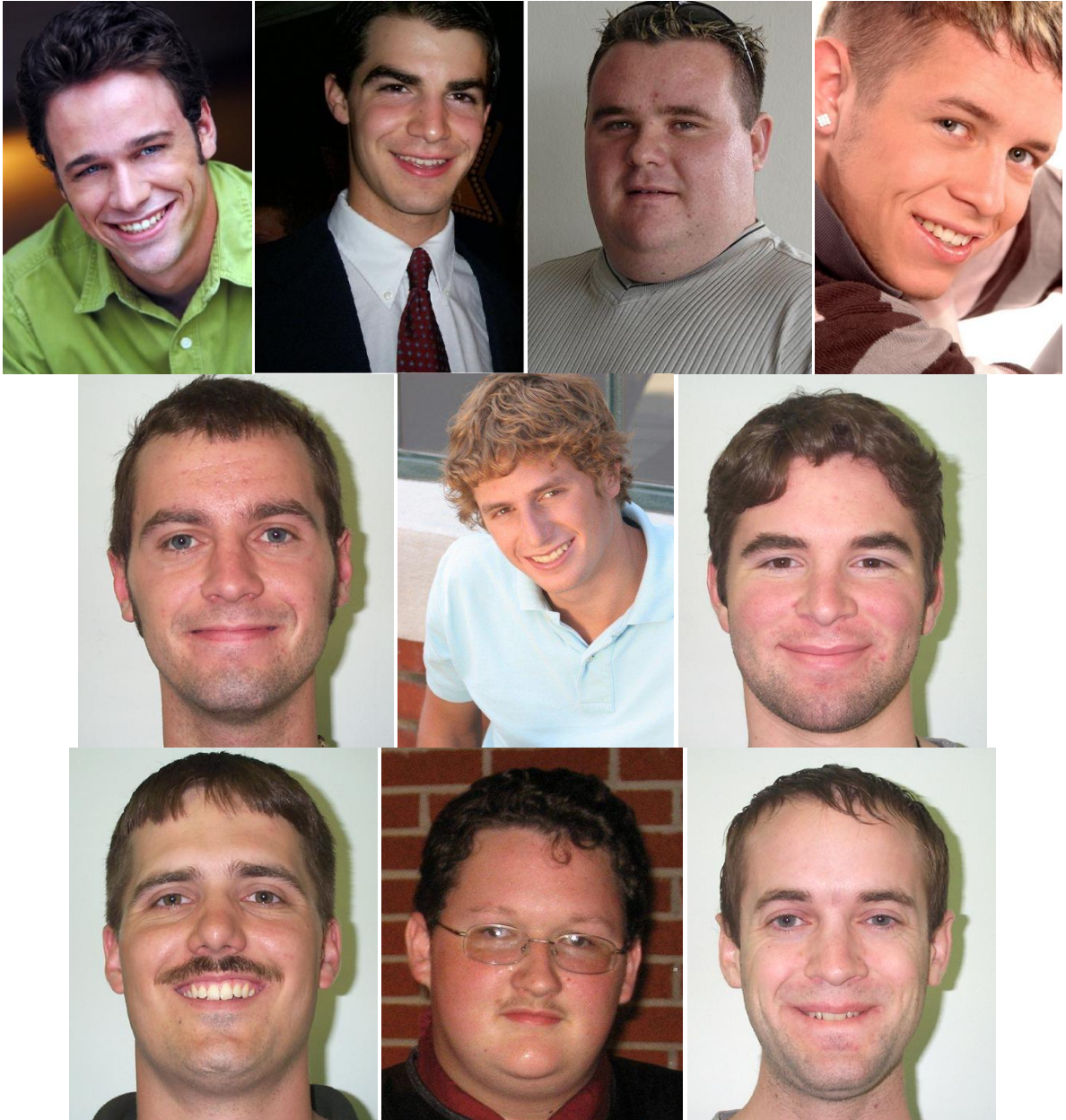
Elliot/Jane is honest and supportive towards others. He dresses well and enjoys fine dining. He owns an expensive car. He plays an active role in local body politics and has substantial financial investments.

Gerrard/Samantha tends to be emotionally distant and is inattentive towards friends. He is also ambitious and is training to become an architect. He has substantial savings and investments.

Tony/Nadine is honest to the point of bluntness, and is also arrogant. He is career-focussed, and shows a great deal of potential to succeed. He is a successful musician.

Scott/Mary is a good listener and caring towards others. He is training to become a lawyer and is driven to succeed. He is financially secure and shows great potential to be successful.

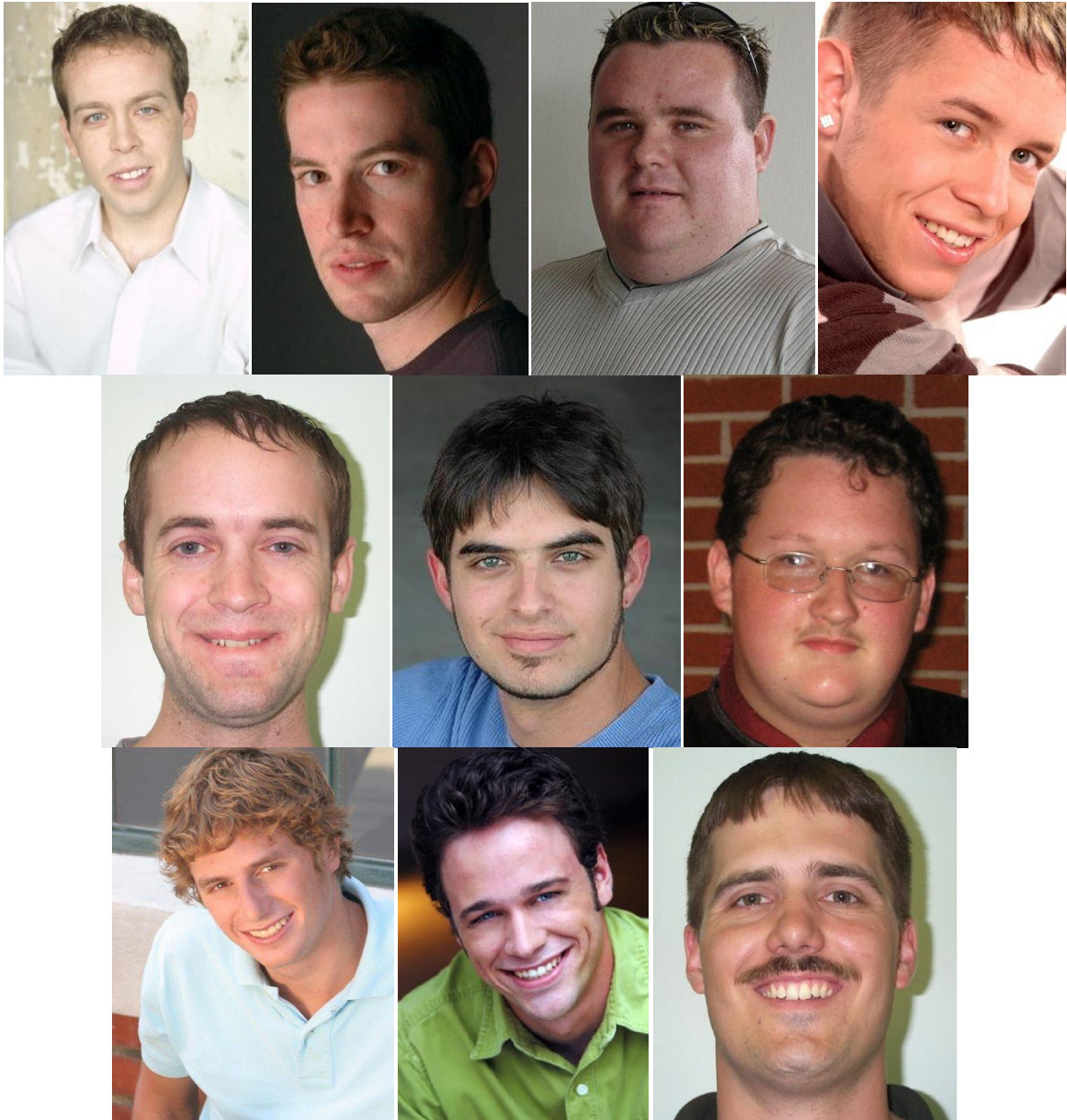
APPENDIX 3A: MALE FACES (STUDY 1)



APPENDIX 3B: FEMALE FACES (STUDY 1)



APPENDIX 3C: MALE FACES (STUDY 2)



APPENDIX 3D: FEMALE FACES (STUDY 2)

